

APS/SDG&E Interconnection Project



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APS/SDG&E Interconnection Project

Final Environmental Document



prepared by
U.S. Department of the Interior
Bureau of Land Management
and
Public Utilities Commission
State of California

October 1981

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FINAL

COMBINED ENVIRONMENTAL DOCUMENT
ENVIRONMENTAL IMPACT STATEMENT (EIS)
ENVIRONMENTAL IMPACT REPORT (EIR)

APS/SDG&E INTERCONNECTION PROJECT
MARICOPA & YUMA COUNTIES, ARIZONA
and
IMPERIAL & SAN DIEGO COUNTIES, CALIFORNIA

Prepared By

Bureau of Land Management - Arizona State Office
and
Public Utilities Commission - State of California
CPUC A-59575 SCH 79061204

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ABSTRACT

Arizona Public Service (APS) and San Diego Gas & Electric (SDG&E) propose to construct and operate a 500kV transmission system interconnecting their power networks. The facilities would reduce oil dependence, provide access to the economy energy market, enhance system reliability and provide transmission capacity to help meet forecast power needs. Alternatives considered are no action, energy conservation and load management, alternative generation sources, alternative transmission systems and technologies, and the proposed action with routing alternatives. The major impacts of the proposed action would be the impact of access roads, tower sites and staging areas on soils, vegetation, wildlife and cultural resources, and the impacts of the transmission lines themselves on aesthetic resources, other land uses and agricultural resources.

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TO: Public Agencies and Interested Parties

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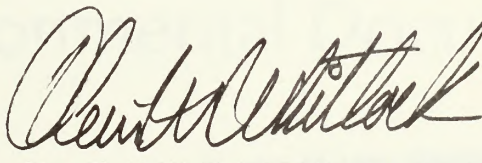
Enclosed is the Final Environmental Document (FES) for the proposed APS/SDG&E Interconnection Project. The two lead agencies, California Public Utilities Commission (CPUC) and Bureau of Land Management (BLM), have prepared this combined document to satisfy the requirements of the California Environmental Quality Act, the National Environmental Policy Act and related regulations.

The draft environmental document and supplement to the draft will not be reprinted to incorporate review comments, corrections and other modifications. Instead, the draft, supplement and this document together constitute the final environmental document - a procedure that saves substantial time, money and paperwork.

The FES is part of the decision-making process, but does not in itself represent or reflect a decision on the proposed action, which will be made in late fall 1981. A BLM record of decision outlining the decision and rationale will be prepared and made available as soon as a decision is reached. The CPUC will issue a decision on the proposed action within 60 days after the release of this document.

Thank you for your interest and participation.


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SUMMARY

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INTRODUCTION

Arizona Public Service (APS) and San Diego Gas & Electric (SDG&E) (the Applicants or utilities) propose to construct and operate a transmission system to interconnect the electric power networks of APS, SDG&E and the Imperial Irrigation District (IID). This environmental document is a joint submittal by the Bureau of Land Management (BLM) and California Public Utilities Commission (CPUC) in compliance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) for consideration with the utilities' applications for granting a Certificate of Public Convenience and Necessity and approval of a right-of-way.

PURPOSE AND NEED

Both APS and SDG&E have an inordinate dependency on oil and natural gas (70 percent and 82 percent, respectively, in the Yuma and San Diego service areas) as primary fuel-sources for electric-power generation. In addition, forecasts by the California Energy Commission (CEC) for the SDG&E service area and by the Applicants indicate a growth in demand for electricity in the mid-to-late 1980s in the Applicants' respective service territories, which the utilities would be unable to meet without additional power and transmission capacity.

The proposed Project would (1) help reduce dependence on oil and natural gas for generating electricity consumed in the APS Lower Colorado River and SDG&E service territories; (2) furnish access to the economy energy market; (3) enhance system reliability; and (4) help meet the forecast need for power of both utilities by providing long-term firm transmission-capacity.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

Five general alternatives were considered by the Applicants to meet the need for oil and gas displacement and additional power in their respective service territories: no action, energy conservation and load management, alternative generation sources, alternative transmission systems and technologies, and the proposed action with routing alternatives.

NO ACTION

The no-action alternative (required for consideration under the NEPA regulations and defined here as the equivalent of the no-project alternative required under the CEQA regulations) has been interpreted in this environmental document to mean that no additional generating or transmission

facilities beyond those included in their current resource plans would be constructed by APS or SDG&E. The utilities would, however, attempt to meet their need for additional power in San Diego and Yuma with existing facilities and various forms of mitigating measures to compensate for the anticipated shortfall in the supply of electric power, but would be unable to meet their objective for oil and gas displacement.

Advantages of the no-action alternative would include the saving of construction costs for new facilities and the preclusion of associated environmental impacts. These advantages would have to be weighed, however, against the disadvantages that would result from or in spite of mitigating measures, such as increased generation from existing oil- and gas-fired power plants, continued and expanded conservation efforts, and increased interruptible power-purchases.

Increased generation from existing oil- and gas-fired units would increase the utilities' oil dependence, contrary to national energy policy; increase fuel costs and customer rates; deteriorate existing air-quality in the Yuma and San Diego areas; and still fail to compensate fully for the anticipated shortfall in electrical energy. Potential energy savings from existing and planned conservation programs have already been incorporated in the utilities' demand forecasts, and even if projected energy savings could be doubled, they would be insufficient to significantly offset the anticipated shortfall in the supply of electricity. Future amounts of interruptible transmission capacity are expected to be substantially less than the limited quantities currently available, and could not be relied upon for systems planning.

Other disadvantages or adverse effects that would result from the energy shortfall, even if the above mitigating measures were implemented, include possible interruptible service, rolling blackouts and brownouts and a moratorium on new hook-ups in the Yuma and San Diego service territories of the utilities, with consequent adverse effects on the incomes, health, safety and general convenience of all classes of customers. Further, the utilities could not take advantage of potential geothermal developments in the Imperial Valley and Mexico, or of coal-fired energy and the economy energy market to the east, all of which would require new transmission capacity.

ENERGY CONSERVATION AND LOAD MANAGEMENT

Energy conservation and load management have the advantage of reducing energy consumption and peak demand with no documented adverse environmental impacts, although there are economic and other constraints that prevent or inhibit implementation of some conservation and load-management programs. Both APS and SDG&E have comprehensive on-going programs in conservation and load management that have reduced energy consumption and system peak demand compared to earlier forecasts. Current demand forecasts for the utilities incorporate anticipated energy savings and reductions in peak demand from conservation and load-management programs.

ALTERNATIVE GENERATION SOURCES

Although a principal objective of the utilities is to reduce oil and gas dependence, all types of potential generating capabilities were considered, including the addition of new oil- and/or gas-fired units, repowering of existing units, the addition of coal or nuclear plants, development of hydroelectric facilities, development of geothermal power, cogeneration, purchases from Mexico, wind turbines, solar energy, biomass and new technologies. These alternatives were found not to be reasonable for either APS or SDG&E because of constraints of capital costs, national energy policy, environmental regulations, state-of-the-art technologies or lead-time required to construct new generating facilities in relation to time-of-need. In the case of APS, no additional generating capability could be justified by the company's long-range forecast until 1990. Most of the alternative generation sources considered by SDG&E would be located off-system and would require new transmission facilities to deliver energy from each of the alternative generation sources to the SDG&E service area.

In addition to considering individual generation alternatives, cumulative effects were considered of some of the alternatives in combination that passed an initial screening based on criteria that they reduce oil/gas requirements and meet the time limit of the stated need. A potential range of capacity for eight alternatives--additional conservation, hydroelectric and geothermal development, purchases from Mexico, cogeneration, wind, solar and biomass development--was then compared to realistic estimates. However, because the values used to quantify the range of potential capacity and realistic estimates were conjectural, and the availability of maximum capacity from all eight alternatives uncertain, it was concluded that for SDG&E the cumulative effects of the alternatives in combination could not be considered to meet the stated need. A similar conclusion was reached for APS by demonstrating that none of the alternatives was independently viable and their effects in combination would not meet the stated need.

ALTERNATIVE TRANSMISSION SYSTEMS AND TECHNOLOGIES

Another alternative considered for meeting the stated need was the transfer of energy from generation sources outside San Diego and Yuma using existing or new transmission systems and/or technologies. And, since a principal concern of both utilities is to obtain reliable base-load energy that is not oil-or gas-fired, ways to transfer energy from existing coal-fired power plants that have surplus capacity were analyzed and evaluated.

The major sources of available coal-fired electrical energy within a practical range of the utilities' service areas are located in northern and eastern Arizona and in New Mexico. Therefore, transmission alternatives, including existing transmission capability, between coal-fired power sources to the east and Yuma/San Diego were investigated. It was determined that sufficient

transmission capability will exist in the 1980s for delivery of SDG&E's firm bulk-power purchases from coal-fired plants to Palo Verde Nuclear Generating Station Switchyard (PVNGS), west of Phoenix. Other delivery points were evaluated, but PVNGS was identified as the most accessible and acceptable because of environmental, cost-effective and systems-engineering reasons. Also, PVNGS is a major regional intertie. Accordingly, the transmission alternatives under consideration involve capability between PVNGS and San Diego.

There are at present no existing or planned transmission facilities that directly connect PVNGS with the SDG&E service area. Lines indirectly connecting the two areas are either fully utilized or fully committed to future planned requirements.

Transmission lines of voltage levels other than 500kV were considered and found to be unsuitable. A 765kV (2000 MW capacity) transmission line would have excess capacity, and two 345kV transmission lines would be required to provide the 1000 MW capacity of a single 500kV line. A direct current (dc) power transmission-system was also considered, but found not to be economically competitive for route-distances less than 400 miles. Underground transmission-systems were evaluated as alternatives, but eliminated because of technical complications, economic and environmental costs, and accessibility, although some adverse visual and aesthetic impacts would be avoided.

Investigation of the alternatives described above led to the conclusion that the optimal means for supplying power to the Applicants' respective service territories within the time-frame of the stated need (given the economic, environmental, national energy-policy and state-of-the-art constraints of alternative actions) would be by constructing an overhead alternating current (ac) transmission-system between the APS main system and its Yuma service territory and a bulk-power delivery center near San Diego. (SDG&E's action to explore a transmission line to the east is also consistent with a CPUC order of May 1978 that "SDG&E shall continue to analyze and pursue the concept of building a transmission-line system to the Arizona border and apply to the appropriate agencies for permits" Order No. 88758.)

THE PROPOSED ACTION

Primary facilities of the proposed Project include a single-circuit 500kV transmission line (approximately 280 miles long) from PVNGS, 40 miles west of Phoenix, Arizona, to Miguel Substation, approximately 10 miles southeast of San Diego, California, and a double-circuit 230kV transmission line from Miguel Substation to Mission Tap, 24 miles northwest of Miguel Substation. Ancillary facilities include intermediate substations at Yuma, Arizona and the Imperial Valley, California; a 161kV transmission line to interconnect the 500kV transmission line with the local power network in Imperial Valley; a

69kV transmission system to interconnect the 500kV transmission line with the local power network in the Yuma area; and communications facilities throughout the system. Of the substations required for the proposed action, new 500kV substations would be required in the Imperial Valley and possibly at two of the four alternative substation-sites in the Yuma area (North Gila and Dome Valley). Existing substations at PVNGS, Miguel, Los Coches and at the other two Yuma alternative sites (Yucca and Gila) would be expanded or modified. Power-transfer-capability of the 500kV system would be nominally rated at 1000 MW, of which APS would have an 11 percent (or 110 MW) entitlement between PVNGS and Yuma. Construction would begin in January 1982 and be completed in May 1984. The life of the proposed Project is estimated to be 50 years.

SCOPING, PROJECT-RELATED STUDIES AND PUBLIC REVIEW PROCESS

DRAFT ENVIRONMENTAL DOCUMENT (DES)*

Prior to preparation of the DES, environmental studies, including regional-scale and corridor-scale studies, were conducted for more than 1,100 miles of alternative transmission-line routes between PVNGS and Mission Tap via Miguel. The principal studies, through which the environmental baseline for impact assessment and mitigation planning was developed, inventoried existing conditions for air, geotechnical and ecological resources in the natural environment; land uses, agricultural resources and socioeconomic, visual and acoustical characteristics of the human environment; and archaeological, historical and Native American cultural resources in the cultural environment. Studies were also conducted (1) to determine the feasibility of the International Border, Salton Sea and Banning Pass alternative corridors, proposed in public scoping meetings; (2) to assess the potential environmental impacts of ancillary facilities; (3) to determine potential growth-inducing effects; and (4) to analyze potential electrical, biological, health and safety effects from the proposed Project.

In compliance with NEPA, appropriate Federal, state and local agencies, and interested persons participated in the identification of significant issues relevant to the proposed Project and in the development of the work plan for environmental studies. The comprehensive scoping process included the following sequential steps:

*The APS/SDG&E Interconnection Project Draft Environmental Document (EIS/EIR) is referred to in this document as the DES; the Supplement to the DES is referred to as the SDES, and this Final Environmental Document is referred to as the FES.

- Review of published and unpublished pertinent data, including a number of previous environmental studies and environmental statements germane to the study area.
- Identification and development of additional data where it was deemed necessary.
- Selection of a preliminary network of alternative transmission corridors for the 500kV transmission line between PVNGS and Miguel, and for the 230kV transmission line between Miguel and Mission Tap.
- Four public meetings to determine significant environmental issues to be emphasized in the environmental studies and review the preliminary corridors under consideration.
- Selection of the final network of alternative transmission corridors, and identification by the Applicants of a proposed centerline within each corridor and alternative study areas for ancillary facilities.
- Preparation of a scope of work.

An extensive program to contact and inform the public was conducted to provide information on the proposed Project to agencies, groups and individuals; to solicit input and obtain data for the environmental studies; and to identify issues and concerns about the proposed Project early in the planning process. BLM, CPUC, APS, SDG&E and Wirth Associates (the environmental consultant) all participated in the program.

SUPPLEMENT TO THE DRAFT ENVIRONMENTAL DOCUMENT (SDES)

Subsequent to the publication of the DES in October 1980, and as a result of issues, concerns and objections raised by various public agencies, special-interest groups and the general public, additional studies were conducted and a decision made to issue a supplement to the DES (SDES). New alternatives were studied either at a Phase II level (corridor scale), or for their general feasibility/suitability to see if they warranted Phase II studies. Alternatives studied for the SDES are briefly described below.

Yuma - Alternative 500kV transmission routes, 500kV/69kV substation sites and associated 69kV transmission systems were studied at a Phase II level in the Yuma area.

Sand Hills - One alternative 500kV transmission route crossing the southern portion of the Sand Hills was studied at a Phase II level in addition to a feasibility/suitability study conducted on a route further north.

Imperial Valley - One 500kV and two 161kV transmission-line alternatives were studied at a Phase II level. Also, the Salton Sea and Banning Pass alternative routes, and 500kV/161kV substation sites previously studied for the DES were reevaluated. The Holtville Drain alignment was analyzed with respect to engineering, design and agricultural constraints. Existing data relevant to the Palo Verde-Devers transmission route, Mesquite Lake Substation, and the median strip of Interstate 8 (I-8) were reviewed.

Dulzura - Three new alternative 500kV transmission routes south of Dulzura were studied at a Phase II level, and the Otay International Border Route was studied for feasibility/suitability.

Miguel-Mission Tap - Results of previous studies on alternative transmission routes between Miguel Substation and Mission Tap were documented.

The environmentally preferred route identified in the SDES included two environmentally preferred routes in the Yuma area, each route reflecting a different set of values, or point of view, in trade-offs between resources. The southern preferred alternative represents the route with the least environmental impacts to the natural environment. The northern preferred alternative responds to public concerns expressed and gives greater significance to land-use conflicts and agricultural impacts.

FINAL ENVIRONMENTAL DOCUMENT (FES)

Subsequent to the publication of the SDES in April 1981, the Wellton-Mohawk Irrigation and Drainage District in Arizona and APS requested that BLM consider alternative routes in the Mohawk Valley and Laguna Mountains to avoid crossing agricultural lands. Also, SDG&E requested a modification of the northern environmentally preferred route in the Sand Hills to straighten the proposed alignment and thereby save substantial costs. Additional environmental studies were undertaken in those areas, the results of which are presented in this document.

PUBLIC REVIEW PROCESS

The public review process for the DES and SDES consisted of soliciting comments from government agencies, institutions, organizations and individuals to whom approximately 1200 copies of each document were sent, either in the form of letters, or remarks during public hearings conducted by BLM and CPUC in Phoenix and Yuma Arizona, and El Centro, El Cajon and San Diego, California.

The response was voluminous. Two-hundred-two letters were received commenting on the DES and SDES; approximately 765 people attended the public hearings; and 148 people spoke at the public hearings. Responses to specific comments received in letters and hearings are included in this FES.

The twelve major issues raised most frequently by reviewers of the documents were: electrical effects, property value, growth impacts, agricultural impacts, alternative energy sources and conservation, bird-collision hazard, underground transmission systems, use of public vis-a-vis private land, ecological vis-a-vis human values, Link 28, avoiding Eucalyptus Hills, and the validity of corridor-scale studies and corridor-selection process.

THE AFFECTED ENVIRONMENT

The environment potentially affected by the proposed action in southwestern Arizona and southern California is one of diverse natural features, land uses and cultural resources. With the exception of a few urban centers, the area is sparsely populated. The eastern portion of the study area is largely desert with characteristically hot summers, cool winters and scant precipitation, while the western portion has a climate typical of the Coastal Mountain Range, with warm summers, cool winters and moderate precipitation.

The Arizona portion of the study area falls within the Sonoran Desert section of the Basin and Range Province and is characterized by stark, rugged mountains rising abruptly from the desert floor to less than 2,000 feet elevation.

The Peninsular Range section in the Lower California Province, the westernmost portion of the study area, is characterized by major northwest-trending ridges, commonly 5,000 to 8,000 feet in elevation, bounded by steep scarps and aproned by numerous small alluvial fans extending from large drainages into adjacent valleys. The Salton Trough section of the Lower California Province, including the Imperial and Coachella valleys as well as the inland Salton Sea, extends eastward from the Peninsular Range to the edges of the Chocolate and Cargo Muchacho mountains, and is bounded on the northeast and southwest by major active faults. The Salton Trough is noted for its low relief and exceptionally low elevations (-200 feet near the Salton Sea, which provides drainage for this section of the Province), and for the Sand Hills in eastern Imperial County, which provide an exceptional example of migrating sand dunes and stationary sand deposits.

The easternmost California alternative corridors cross the Colorado Desert in the Lower California Province, a region dominated by northwest-trending eroded mountains separated by broad flat alluvium-filled valleys. The Colorado River, which is the largest water source in Imperial County, forms the eastern boundary of the Colorado Desert and the natural and political boundary between Arizona and California.

The most significant resources and land uses within the alternative transmission-line corridors include the riparian habitat along the Colorado and Gila rivers; unique vegetative communities; Federal- and state-protected plant and wildlife species; big game animals; irrigated farmlands; the Salton Sea National Wildlife Refuge; the Anza Borrego State Park (the second largest state park in the Nation); the Gila Bend (Papago), Cocopah, Fort Yuma (Quechan) and Campo (Kumeyaay) Indian reservations; Luke Air Force Gunnery Range; Yuma Proving Ground; the scenic quality of riparian and mountain landscapes; the Sand Hills; and archaeological, historical and Native American cultural resources.

ENVIRONMENTAL CONSEQUENCES

IMPACT ASSESSMENT/MITIGATION PLANNING PROCESS (IA/MPP)

Environmental consequences from the proposed action and alternatives are the residual impacts derived through a process that first identified, and subsequently evaluated and integrated, initial (unmitigated) impacts and appropriate mitigation measures. The process involved assessing impacts based upon a comparison of the proposed Project with the pre-Project environment; determining mitigation that would avoid, effectively reduce or eliminate impacts; and identifying "residual" impacts, or impacts remaining after the application of mitigation committed to by both the Applicants and BLM. The impact assessment was conducted on alternative routes and assumed a geographic tolerance of one-half mile (one-quarter mile on each side of the Applicants' preliminary centerline).

TRANSMISSION - 500kV/230kV

Significant types of impacts relevant to ecological resources include any impact that affects officially regulated or protected species, communities or areas; interferes with migration of wildlife; alters the diversity of biotic communities or population of plant or animal species; affects important habitat; or increases potential for wildfire.

In Arizona, potential significant impacts may occur to special-status plant species, e.g., elephant tree; migratory waterfowl, bighorn sheep and Sonoran pronghorn habitat, and possible habitat for Gila monster, desert tortoise and flat-tailed horned lizard. In the California study area, potential significant impacts may occur to unique plant species, Andrew's scarab beetle, bighorn sheep range, raptor nesting areas, good-quality habitat and a vernal pool.

Characteristically, direct and long-term impact types for social and economic land uses include any impact that displaces, alters or otherwise physically affects any existing, developing or planned residential, commercial, industrial or institutional use or activity, utility line or facility, communications facility or related activity, air-facility or related activity; affects official general or regional plans, policies, goals or operations of communities or governmental agencies; or affects reliability of electrical service because of potential man-induced hazards.

Potential significant residual land-use impacts were identified for individual and clusters of residences scattered throughout the study corridors; a few private airstrips, some institutional and light industrial land-uses and mobile-home parks.

Potential significant residual impacts to park, preservation and recreation land uses include the Fred J. Weiler Greenbelt, BLM-off road vehicles (ORV) open areas, BLM concentrated use zones, a California State Preservation Area of Outstanding Natural Sand Dunes, the Pacific Crest Trail, the Coochama Experimental Forest and Cottonwood Golf Course.

The agricultural study identified long-term impacts to agricultural resources in terms of estimated annual costs of additional farm equipment, irrigation and weed-control operations, within and around transmission towers, additional aerial applications, and crop-loss. Short-term impacts included costs of crop-loss due to loss of cropping area, additional irrigation operations, cost of site-reconditioning, cost of perennial crop-reestablishment and loss of crop due to tree pruning. Impact types considered include any impact that affects crop production and farming operations or occupies "prime" or "unique" farmland. A moderate level of impact was applied to all agricultural land, regardless of the type of crop impacted. (See Agricultural Study, Appendix D in the DES.)

The socioeconomic impact analysis addressed potential positive and negative construction-worker, expenditure and fiscal effects that would result from the construction of the proposed facilities. The maximum demand by construction workers for temporary accommodations could be met with existing facilities in each community and community services would be adequate. Potential indirect-tax revenues that would accrue to communities and taxing jurisdictions in the study area would be minimal, but would be a beneficial impact of the proposed Project. Increases in property-tax revenues during operation would be a significant long-term beneficial impact. Personal income in the region would rise as a result of Project expenditures, which would be a small beneficial impact for the region.

Visual impacts were considered to be adverse, direct and long-term. Typical impact-types include impacts affecting: the quality of any scenic resource; any resource possessing rare or unique value; the view from or the visual setting of any residential, commercial, institutional or other visually sensitive

land-use; the view from a visual setting of any travel route; the view from a visual setting of any established, designated or planned recreation, preservation, educational or scientific facility, use area, activity, view point or vista.

Visual intrusion of the transmission line because of structures contrast (no similar existing structures), landform contrast (new or upgraded access roads and tower-pad construction) and vegetation contrast (vegetation removal), would continue throughout the life of the proposed Project. The greatest residual impacts would occur in areas of natural scenic-quality or where the transmission line would be in close proximity to residences, travel routes (e.g., I-8), use areas (Sand Hills), or other sensitive viewing locations.

Impacts to archaeological resources, which are nonrenewable, would be adverse and permanent. Construction and operation activities could result in impact types affecting archaeological resources physically and/or visually; sites or districts included in or eligible for inclusion in the National Register of Historic Places; or sites or areas identified as having special archaeological value. Impact levels were probability levels determined by a predictive model.

Potential high impacts to archaeological resources were predicted in the Gila Bend Mountains, along the Gila River, in the Muggins and Laguna mountains, the foothills of the Gila Mountains, the Colorado River Pilot Knob area, the Picacho Basin along the ancient Lake Cahuilla shorelines, the base of the Fish Creek Mountains, in the vicinity of Jacumba, along the Jamul, Tecate and Dulzura creeks and the Sycamore Canyon drainage, and along the base of Mother Miguel Mountain.

Types of impacts to historical resources were identified as direct physical impacts resulting from construction-related activities; indirect physical impacts resulting from increased access; and visual impacts created by the presence of towers and lines during the life of the proposed Project.

No potential significant impacts to historical resources are expected in Arizona. In California, significant impacts were identified for the Pilot Knob historic Native American site, the Plank Road Area of Critical Environmental Concern, Southern Emigrant (Butterfield) Road and the Jamul Cement Works.

Three types of impacts to Native American cultural resources were assessed: physical, visual and aural. No specific identification of Native American cultural resources will be disclosed in this document because of Native American concern for the sacred nature of many sites and the desire to protect the resources. Potential significant impacts would occur to multiple-resource areas, rock-art areas, cremation/burial areas, village sites and sacred mountains.

No significant potential impacts to air and geotechnical resources or acoustical characteristics were identified.

ANCILLARY FACILITIES

The construction and operation of the Imperial Valley Substation sites could highly impact archaeological resources. A high probability for encountering sites was indicated by the predictive model. (Subsequently, an intensive survey in July 1980 revealed no sites at Substation Site D.) The expansion of facilities at Miguel Substation would potentially affect ecological and archaeological resources significantly. The expansion of facilities at Los Coches would occur near Lake Jennings Park, a highly sensitive land-use. Depending on the final location of the Yucca Substation, a high impact to a single dwelling could occur. No significant potential environmental impacts were identified for the North Gila Substation site; however, significant impacts at the Yucca Substation site would occur to Native American and agricultural resources. (The 50 acres of agricultural land that would be removed from production represents the most significant impact (high impact) to agricultural resources from the proposed Project.) Significant (moderate) potential impacts at the North Gila Substation site were identified for historical and visual resources, while at the Dome Valley Substation site there would be a potential significant (moderate) impact to ecological resources.

Construction and operation of the 69kV transmission system would result in significant (moderate) potential impacts to ecological resources along routes that cross riparian areas and known flat-tailed horned lizard habitat. A high impact could also result where the 69kV transmission line would cross the N.R. Adair County Park. A moderate impact to visual, historic and Native American cultural resources could also occur along sections of the 69kV alternative routes.

Significant (high) potential impacts to ecological resources could occur from the construction and operation of the 161kV transmission line because of an important waterfowl rookery and potential waterfowl-collision hazard. Significant (high) potential impacts also exist for archaeological resources along 161kV alternative routes because of projected high density of sites.

Potential high impacts from the construction of microwave towers could occur to Native American cultural resources at one site.

ELECTRICAL, BIOLOGICAL, HEALTH AND SAFETY EFFECTS

Only the potential impacts from the 500kV line were analyzed, as any electrical effects experienced by the public, with the exception of audible noise, would be less in areas adjacent to substation and communications facilities and beneath lower-voltage lines.

The electrical effects considered in the studies were those resulting from corona and electric fields. Corona, which is the discharge of energy from an energized line when the voltage gradient exceeds the breakdown strength of

air, is greatest during wet weather. Effects of corona are audible noise, visible light, photochemical oxidants, and radio and television interference. No significant adverse effects from audible noise, visible light and photochemical oxidants are anticipated. Radio and television interference would be most pronounced in areas of weak reception and where antennae are located close to a transmission line.

Effects from electrostatic and magnetic fields that develop around a transmission line are of general concern because of the potential for induced voltage onto conductive objects within the electrostatic field, instantaneous ignition of fuel, electric shock to human beings and possible health and biological hazards.

Short-circuit current from induced voltage would be limited by the proposed Project's line design in compliance with national and state safety codes, and the electrostatic potential would be eliminated for all permanent structures by grounding within 200 feet of the right-of-way. Line design will limit to 5.0 milliamps (mA) the short-circuit current from metallic objects. Studies have shown that let-go thresholds for people are equal to or greater than 5.0 mA.

Interference that might result from induced voltage from a magnetic field to pipelines, rails, overhead communications circuits or other electric lines would be mitigated by the Applicants to the satisfaction of affected utilities and individuals.

The results of studies, reported to date, on biological and health effects from electric fields are inconclusive in establishing that such effects do occur. On the other hand, it has not been clearly demonstrated that such effects do not occur. If they do, in fact, occur, experts are not in agreement that they pose a potential biological or health hazard. Reversion of pacemakers is the most substantial effect noted, although it is not considered a serious problem when it occurs for short periods of time. To date, no evidence that a transmission line has caused a serious problem to the wearer of a pacemaker has been found.

GROWTH INDUCEMENT

A growth-inducing impact study was conducted to estimate potential economic and demographic impacts to the SDG&E service area from the proposed Project. A baseline "no-project" alternative was hypothesized using criteria established by CPUC.

The proposed Project was considered to be growth-accommodating rather than growth-inducing, with any growth differential between the Project and no-Project alternatives not attributable solely to the Project.

Results of the study indicate that potential growth-inducing impacts would not be significant.

PREFERRED ROUTES

(See Figure 3-15(R)F and Table 1-1F in Chapter 1.)

ENVIRONMENTALLY PREFERRED ROUTE

The northern and southern environmentally preferred routes identified in Chapter 3 of the SDES are still the environmentally preferred routes. However, Link 167 has also been identified as an environmentally preferred alternative to Links 134, 162, 163, 164 and 165 in the Sand Hills.

Description of the Environmentally Preferred Route

PVNGS to Yuma

While the environmental consequences along the Arizona portion of the proposed preferred route can generally be characterized as moderate-to-low, there remain some significant unavoidable adverse impacts. The preferred route would traverse areas of moderate-to-high natural scenic-quality and be visible (in close proximity) from residences and portions of I-8. Visual impacts would result from structures contrast (no existing structures similar to that of the proposed Project) and landform contrasts. The preferred route would pass through special-status plant habitats (11.0 miles) and the habitat of the Gila monster. Of the approximately 2.2 miles of agricultural land crossed, approximately 0.8 acre* would be eliminated from productive use. One single-family dwelling could be highly impacted. Cultural-resource sites important to Native Americans would be affected by this route and previously recorded archaeological sites may be crossed.

Yuma

Arizona Southern - While the environmental consequences along the southern portion of the proposed preferred route can generally be characterized as moderate-to-high, there remain some significant unavoidable adverse impacts.

*Because of adjustments by the Applicant in the proposed centerline, these figures vary from the ones given in the corridor-scale study. Total agricultural land potentially removed in Arizona between PVNGS and the Colorado River on the southern environmentally preferred route would be approximately 7.9 acres; on the northern environmentally preferred route 1.8 acres; and on the BLM preferred route 1.3 acres.

The preferred route would be visible (in close proximity) from residences. Visual impacts would result from structures contrast (no existing structures similar to that of the proposed Project). The preferred route would pass through habitat of the flat-tailed horned lizard. Of the approximately 17.8 miles of agricultural land crossed, approximately 7.1 acres would be eliminated from productive use. Two housing subdivisions and one airstrip would be traversed, and 22 single-family dwellings could be highly impacted. Cultural-resource sites important to Native Americans would be affected by this route.

Arizona Northern - While the environmental consequences along the northern portion of the proposed preferred route can generally be characterized as moderate-to-high, there remain some significant unavoidable adverse impacts. The preferred route would traverse areas of moderate-to-high natural scenic-quality and be visible (in close proximity) from residences. Visual impacts would result from structures contrast (no existing structures similar to that of the proposed Project) and landform contrasts. The preferred route would cross the Colorado River (potential bird-collision hazard). Of the approximately 2.0 miles of agricultural land crossed, approximately 1.0 acre would be eliminated from productive use. Cultural-resource sites important to Native Americans would be affected by this route.

California Southern - The southern portion of the environmentally preferred route can generally be characterized as having moderate-to-high environmental consequences with several significant unavoidable adverse impacts. The route would traverse areas of moderate-to-high natural scenic-quality. Visual impacts resulting from structures contrast and landform contrast are predicted for this route. The preferred route would pass through 0.2 mile of Colorado River habitat and cross one area of park, preservation or recreation land-use. The route would also traverse an area of archaeological, historical and Native American concern designated as an ACEC by the BLM.

California Northern - The northern portion of the environmentally preferred route, which includes two alternatives between the Cargo Muchacho Mountains and the Sand Hills, can generally be characterized as having moderate-to-high environmental consequences with several significant unavoidable adverse impacts. Both alternatives would traverse areas of moderate-to-high natural scenic-quality, and visual impacts would result from structures contrast and landform contrast. The preferred routes would pass through 0.2 mile of Colorado River habitat and cross several areas of park, preservation or recreation land-use. The routes would also traverse areas of archaeological concern designated by BLM as having "very high" sensitivity. Numerous cultural-resource sites of Native American concern would be potentially affected.

Sand Hills-Mission Tap

The California portion of the environmentally preferred route can generally be characterized as having moderate environmental consequences with several significant unavoidable adverse impacts. The route would traverse areas of moderate-to-high natural scenic-quality and be visible from residences. Visual impacts resulting from structure contrast and landform contrast are predicted for a major portion of the route. The preferred route would pass through 79.6 miles of special-status plant habitat and traverse raptor nesting areas and the habitats of the Andrew's scarab beetle, flat-tailed horned lizard, bighorn sheep and magic gecko. Of approximately 22.4 miles of agricultural land crossed, approximately 10.1 acres would be excluded from productive use. The preferred route crosses several areas of park, preservation or recreation land-use; one single-family dwelling and one mobile home would be highly impacted. The route would also traverse areas of archaeological concern designated by BLM as having "very high" sensitivity and "severe density" of sites. One historical site and numerous cultural-resource sites of Native American concern would be potentially affected.

BLM PREFERRED ROUTE

The BLM Preferred Route on public lands is essentially the same as the northern environmentally preferred route, using Link 167, with two deviations. The BLM preferred route crosses the Mohawk Valley on Link 88 to the north of the environmentally preferred route and crosses Dome Valley and the Laguna Mountains to the north of the environmentally preferred route on Links 86, 78a and 87. The BLM has deviated from the environmentally preferred route to accommodate local preferences.

ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE'S RECOMMENDED ROUTE

The Arizona State Siting Committee's recommended route is essentially the same as the BLM preferred route in Arizona with one deviation. The Siting Committee's recommended route crosses the Muggins Mountains (and Yuma Proving Ground) on Link 28, whereas the BLM (and environmentally preferred) route skirts the Muggins Mountains to the south on Links 29, 30a and 30b. Table 1-IF lists the preferred routes by link. In the event the BLM does not grant a right-of-way on Link 28, the Siting Committee recommends Links 29, 30a and 30b as its alternate preferred route.

**TABLE OF CONTENTS,
LIST OF FIGURES & LIST OF TABLES**

TABLE OF CONTENTS

	<u>Page</u>
CHAPTER I - ADDENDA	
INTRODUCTION	I- 1f
THE AFFECTED ENVIRONMENT	I- 3f
The Natural Environment	I- 3f
Climate and Air Resources	I- 3f
Geotechnical Features	I- 3f
Ecological Resources	I- 4f
The Human Environment	I- 5f
Land Use	I- 5f
Agricultural Resources	I- 6f
Socioeconomic - Construction and Fiscal Analysis	I- 6f
Visual Characteristics	I- 6f
Acoustical Characteristics	I- 7f
The Cultural Environment	I- 7f
Archaeological Resources	I- 7f
Historical Resources	I- 8f
Native American Cultural Resources	I- 9f
ENVIRONMENTAL CONSEQUENCES	I-10f
The Natural Environment	I-10f
Air Resources	I-10f
Geotechnical Features	I-10f
Ecological Resources	I-10f
The Human Environment	I-11f
Land Use	I-11f
Socioeconomic - Construction and Fiscal Analysis	I-11f
Visual Characteristics	I-12f
Acoustical Characteristics	I-12f

Table of Contents (continued)

	<u>Page</u>
The Cultural Environment	1-12f
Archaeological Resources	1-12f
Historical Resources	1-13f
Native American Cultural Resources	1-13f
COMPARISON OF ROUTES	1-14f
Environmentally Preferred Routes	1-14f
Set XVI - Mohawk Valley	1-14f
Set XVII - Laguna Mountains	1-14f
Set XVIII - Sand Hills	1-14f
PREFERRED ROUTES	1-16f
Environmentally Preferred Route	1-16f
BLM Preferred Route	1-16f
Arizona Power Plant and Transmission Line Siting Committee's Recommended Route	1-16f

CHAPTER 2 - PUBLIC COMMENTS AND RESPONSES DES AND SDES

Introduction	2- 1f
Public Review Process and Procedures	2- 1f
Summaries of Major Issues/Concerns and Responses	2- 2f
Issue No. 1 - Electrical Effects	2- 3f
Issue No. 2 - Property Value	2- 4f
Issue No. 3 - Growth Impacts	2- 5f
Issue No. 4 - Agricultural Impacts	2- 5f
Issue No. 5 - Alternative Energy Sources and Conservation	2-12f

Table of Contents (continued)

	<u>Page</u>
Issue No. 6 - Bird-Collision Hazard	2-12f
Issue No. 7 - Underground Construction	2-13f
Issue No. 8 - Use of Public Vis-a-Vis Private Land	2-32f
Issue No. 9 - Ecological Vis-a-Vis Human Values	2-32f
Issue No. 10 - Link 28	2-33f
Issue No. 11 - Validity of Corridor-Scale Studies and Corridor Selection Process	2-34f
Issue No. 12 - Avoiding Eucalyptus Hills	2-35f
Comments and Responses - Tables 2-1F through 2-6F (follows page)	2-36f
Index to Respondents (follows Table 2-6F)	

CHAPTER 3 - ERRATA AND CHANGES

Draft Environmental Document	3- 1f
Supplement to the Draft Environmental Document	3- 2f
Changes	3- 8f
SDG&E Power Purchases	3- 8f
Integration of SDG&E and TEP Systems	3- 8f
Proposed IID Ownership in APS/SDG&E Interconnection Project	3- 8f
Contributor for Underground Transmission Study	3- 9f

BIBLIOGRAPHY

LIST OF FIGURES

<u>FIGURE NUMBER</u>	<u>TITLE</u>	<u>FOLLOWS PAGE</u>
CHAPTER 1		
3-13(R)F	Final Links and Ancillary Facilities	1- 2f
3-15(R)F	Preferred Routes	1-15f

CHAPTER 2

F-1	Effectiveness of Spray Coverage	2-10f
F-2	Typical AC Underground High-Pressure or Self-Contained Transmission System	2-18f

LIST OF TABLES

<u>TABLE NUMBER</u>	<u>TITLE</u>	<u>FOLLOWS PAGE</u>
<u>CHAPTER 1</u>		
5-3(A)F	Locations of Selectively Committed Mitigation	1-10f
3-9(R)F	Environmental Consequences	1-15f
1-1F	Preferred Routes	1-15f

List of Tables (continued)

<u>TABLE NUMBER</u>	<u>TITLE</u>	<u>FOLLOWS PAGE</u>
<u>CHAPTER 2</u>		
2-AF	Comparison of Typical AC Underground Systems	2-26f
2-IF	DES Summaries of Letters and Responses	2-36f
2-2F	DES Complete Letters and Responses	2-36f
2-3F	DES Summaries of Comments at Public Hearings	2-36f
2-4F	SDES Summaries of Letters and Responses	2-36f
2-5F	SDES Complete Letters and Responses	2-36f
2-6F	SDES Summaries of Comments at Public Hearings	2-36f
Index to Respondents		2-36f

CHAPTER I - ADDENDA

INTRODUCTION

Subsequent to the publication of the Supplement to the Draft Environmental Statement (SDES) April 1981, the Wellton-Mohawk Irrigation and Drainage District in Arizona and Arizona Public Service Company (APS) requested that the Bureau of Land Management (BLM) consider alternative routes in the Mohawk Valley and Laguna Mountains to avoid crossing agricultural lands. Also, San Diego Gas & Electric (SDG&E) requested a modification of the northern environmentally preferred route in the Sand Hills to straighten the alignment and thereby save approximately \$675,600 in construction costs. Additional environmental studies were undertaken in those areas and three new links identified: Link 88 in the Mohawk Valley, north of the railroad; Link 87, in the southern foothills of the Laguna Mountains; and Link 167, on Pilot Knob Mesa (see Figure 3-13(R)F,* Final Links and Ancillary Facilities).

Revision of the routing network to accommodate new links also required subdivision of four existing links: Link 23 (23a, 23b), Link 41 (41a, 41b), Link 78 (78a, 78b) and Link 126A (126A(a), 126A(b)). The new links and corresponding links from the northern environmentally preferred route were then reorganized as follows:

Arizona

Set XVI - Mohawk Valley

Route 1 - Links 23b, 26 (22.3 mi.)
Route 2 - Link 88 (22.2 mi.)

Set XVII - Laguna Mountains

Route 1 - Links 40b, 41a, 74b, 76 (4.6 mi.)
Route 2 - Links 78a, 87 (5.0 mi.)

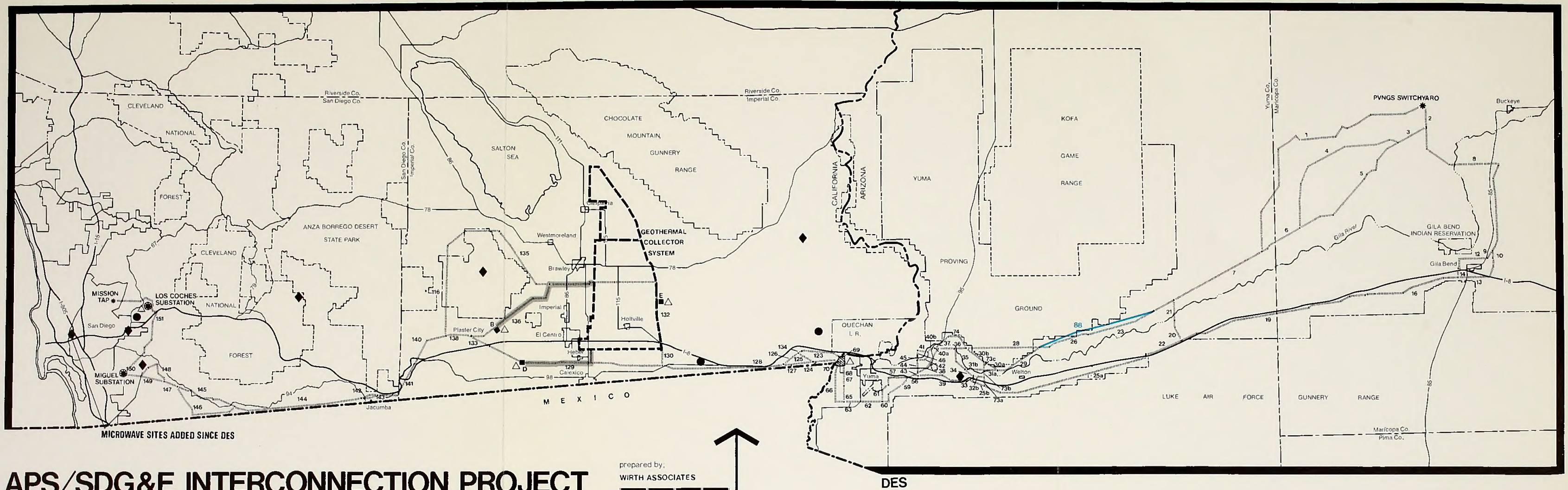
California

Set XVIII - Sand Hills

Route 1 - Links 126A(a), 134,
162, 163, 164, 165
(13.0 mi.)
Route 2 - Link 167 (12.8 mi.)

*Table and figure numbers with (R) appeared in the SDES as revised DES tables and figures, and table and figure numbers with (A) appeared as supplementary information to DES tables and figures. In this document, table and figure numbers with an "F" indicate that they appear only in the FES.

All links in Sets XVI, XVII and XVIII except Links 87, 88 and 167 were included in the APS/SDG&E Interconnection Project Environmental Study, Phase II Corridor Studies and Addendum, and results summarized in the Draft Environmental Document (DES) or Supplement to the Draft Environmental Document (SDES). Therefore, only the results of environmental studies for Links 87, 88 and 167, and comparisons between each link and corresponding alternative links (routes), are reported in this document. Resource inventories and impact-assessments for these links are based on addenda to the above-cited source, the Addendum: Links 87 and 88, and Addendum: Link 167, Wirth Associates, Inc., October 1981. Also, since study methodologies for the addendum reports were the same as those for the previous Phase II environmental studies, they will not be described here, but can be found in the DES.



APS/SDG&E INTERCONNECTION PROJECT

FINAL LINKS AND ANCILLARY FACILITIES

- FES Links
- 500/230kV Transmission Lines
- Link and Number
- Substations
 - Alternative Imperial Valley Substation Sites
 - Expanded (Los Coches, Miguel)
 - Alternative Yuma Substations
- Microwave Communication System
 - Associated with Substations
 - Associated with Existing Facilities
 - New Sites
- 69kV/161kV Transmission Lines
 - Typical Alternative 161kV Transmission Corridor
 - Typical Alternative 69kV Transmission Corridor

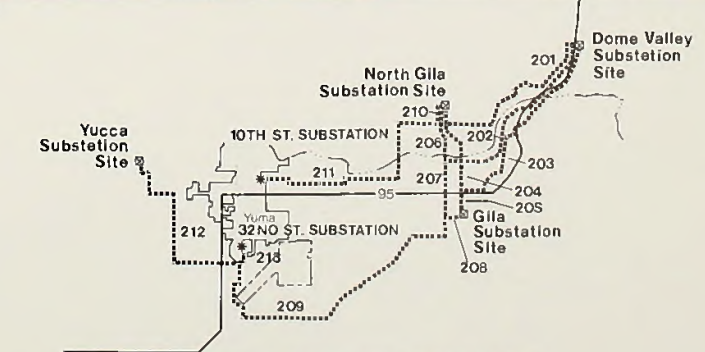
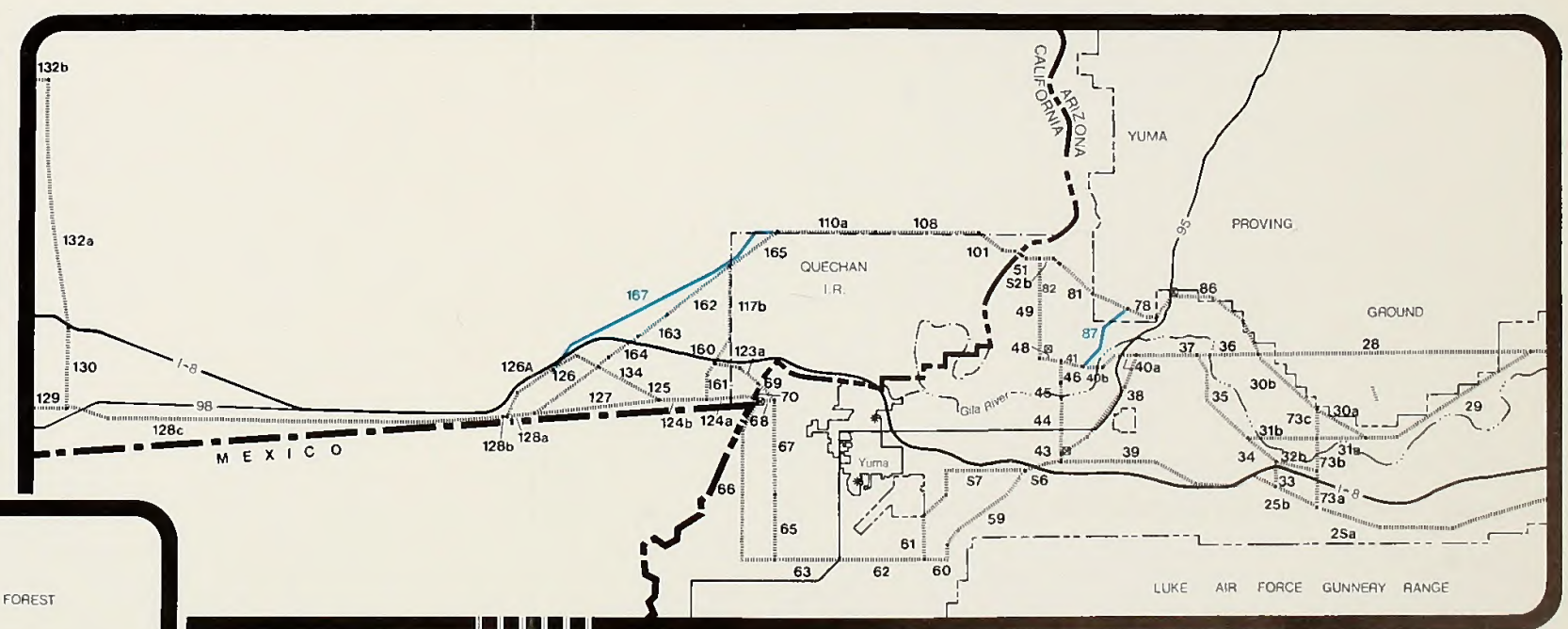
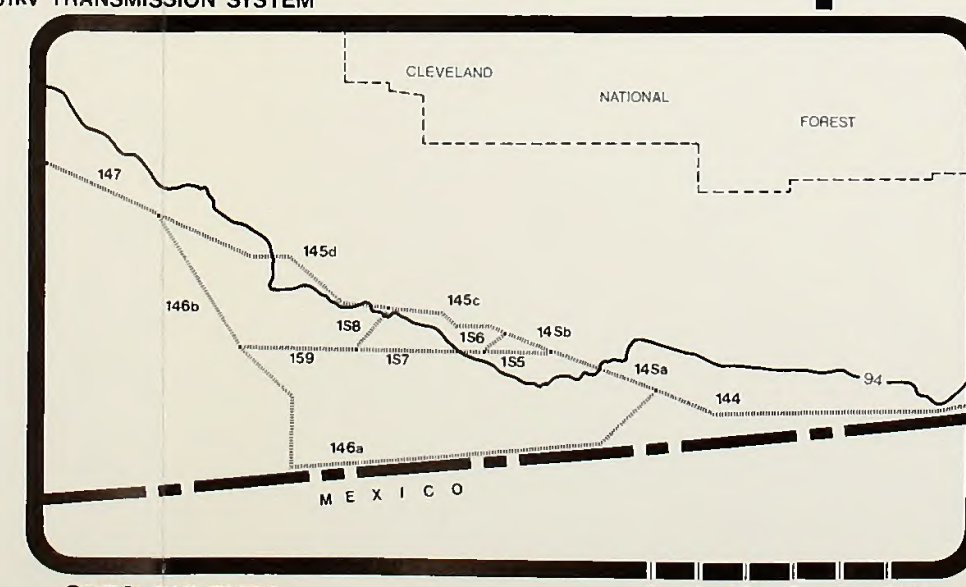
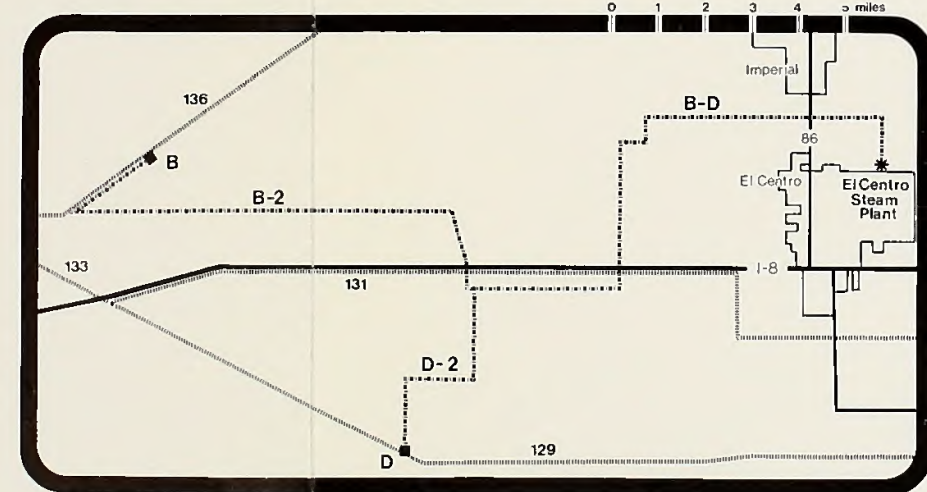


Figure 3-13 (R) F

THE AFFECTED ENVIRONMENT

THE NATURAL ENVIRONMENT

Climate and Air Resources

Climate and air resources associated with Links 87, 88 and 167 were investigated in April and May 1981.

Results

The description of climate provided in the DES also applies to the climate associated with the new alternatives evaluated. Table 4-1 in the DES identifies regional compliance with Federal air standards according to the United States Environmental Protection Agency (USEPA) designations. Link 167 would cross or be adjacent to the Fort Yuma Indian Reservation. This area has been designated as a Class II air-quality area in terms of USEPA prevention of significant deterioration standards. However, the tribal authorities are permitted by law to petition for redesignation to Class I.

Geotechnical Features

Geotechnical features and hazards were inventoried in April and May 1981 according to four major classifications: geology, paleontology, soils and hydrology.

Results

No significant geotechnical hazards were identified on Links 87, 88 and 167. Also, no significant geotechnical features were identified on Link 87.

Geology

On Link 167 there is a high-to-moderate potential for seismic settlement and slope instability, as well as active subsidence potential.

Soils

A high potential for soils erosion was identified on Link 167.

THE AFFECTED ENVIRONMENT

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Geology

On Link 167 there is a high-to-moderate potential for seismic settlement and slope instability, as well as active subsidence potential.

Soils

A high potential for soils erosion was identified on Link 167.

Ecological Resources

Ecological resources for Links 87, 88 and 167 were inventoried in April and May 1981.

Results

Links 87 and 88 - Vegetation types present on Links 87 and 88 consist principally of creosotebush (Larrea tridentata) associations with white bursage (Ambrosia dumosa), and paloverde (Cercidium sp.) - ironwood (Olneya tesota) associations along washes.

Link 167 - Four vegetation types were observed along Link 167: creosotebush-bursage, desert wash, wash woodland and sand dune. These vegetation types were previously described in the DES. The majority of the link is low-quality creosotebush-bursage and desert-wash habitat. The wash woodland habitat in Araz Wash is considered habitat for the burro mule deer.

Special-Status Biota

The few special-status plant species likely to occur on both Links 87 and 88 are protected by the Arizona Native Plant Law. No species of Federally listed plants is anticipated to occur within either link. Among the species present that are included in the Arizona Native Plant Law are: beavertail cactus (Opuntia basilaris), cholla (Opuntia sp.), hedgehog (Echinocereus engelmanni), barrel cactus (Ferocactus acanthodes), pincushion cactus (Mammillaria sp.), paloverde (Cercidium sp.), ironwood (Olneya tesota), ocotillo (Fouquieria splendens) and desert holly (Atriplex hymenelytra). There may also be mesquite trees (Prosopis glandulosa) along washes and elephant trees (Bursera microphylla) may occur in low densities in the Muggins and Laguna mountains.

It is unlikely that any special-status wildlife species occur on either Link 87 or 88 in numbers. Suitable habitat is not present for such species as Gila monster (Heloderma suspectum), desert tortoise (Gopherus agassizi), flat-tailed horned lizard (Phrynosoma mcalli), desert bighorn sheep (Ovis canadensis) or any of the special-status bird species discussed in the Phase II Corridor Studies and the Phase II Addendum Studies. Bureau of Land Management (BLM) sensitive species such as Kit fox (Vulpes macrotus), desert iguana (Dipsosaurus dorsalis), Cooper's hawk (Accipiter cooperi) and prairie falcon (Falco mexicanus), for example, are likely to occur at least locally or occasionally on the two links. Similarly, populations of game animals occur throughout both links, especially along washes (see Phase II report).

The portion of Link 167 located in the Algodones Dunes crosses Andrew's dune scarab beetle (*Pseudocotalpa andrewsi*) (Federally designated as "threatened") and sensitive plant species habitat. In addition, Link 167 crosses sand dune habitat in an area similar to Link 164, where burrows of the desert tortoise (protected by the State of California and designated by the BLM as a "sensitive species") were observed in a previous reconnaissance.

THE HUMAN ENVIRONMENT

Land Use

Land uses for Links 87, 88 and 167 were inventoried in April and May 1981.

Results

Link 87 - Link 87 crosses a military reservation and a BLM Recommended Utility Corridor. Park, preservation and recreation land-uses crossed by the link include the N.R. Adair County Park and BLM Intensive Wilderness Inventory Unit 5-38. One portion of Link 87 is included in the Yuma County, Arizona 1985 Comprehensive General Plan for military land-use and the remainder has been zoned by Yuma County for open space and recreation. Link 87 crosses 1.0 mile of military land and 2.6 miles of public land.

Link 88 - No park, preservation and recreation land-uses were identified along Link 88. Social and economic land-uses crossed by Link 88 include the Southern Pacific Railroad and Southern Pacific Pipeline. The entire link is included in the Yuma County, Arizona 1985 Comprehensive General Plan for open space and recreation, and military land-uses. Link 88 crosses 2.5 miles of military land, 10.7 miles of public land, 6.8 miles of state land and 2.2 miles of county land.

Link 167 - Social and economic land-uses crossed by Link 167 include County Highway S34, the All-American Canal Road, the Department of Energy 161kV woodpole transmission-line, Southern Pacific Railroad, Southern Pacific Pipeline and All-American Canal. Park, preservation and recreation land-uses crossed by Link 167 include BLM Concentrated Use Zone #553, a potential California State Preservation Area (Outstanding Natural Sand Dunes) and a BLM-Off Road Vehicle (ORV) open area. Link 167 is also included in the Imperial County Ultimate Plan for open space, recreation and industrial land-uses. Link 167 crosses 3.2 miles of Indian reservation, 6.8 miles of public land and 2.8 miles of private land.

Agricultural Resources

No agricultural resources are crossed by Links 87, 88 and 167.

Socioeconomic - Construction and Fiscal Analysis

The socioeconomic inventory and analysis for Links 87, 88 and 167 were conducted in April 1981. Information was provided by APS on total costs of Links 87 and 88, and by SDG&E for total costs of Link 167.

Results

	<u>County</u>	<u>School District No.</u>	<u>Miles</u>	<u>Total Cost (\$1,000)</u>	<u>Assessed Value (\$1,000)</u>	<u>Tax Rate (Per \$100)</u>
<u>Link 87</u>	Yuma	01 ¹	3.6	1,225	385	11.4348
<u>Link 88</u>	Yuma	01 ¹	22.2	6,243	1,963	11.4348
<u>Link 167</u>	Imperial	94000 ²	12.8	4,133	827	4.8255

Visual Characteristics

Visual characteristics of Links 87, 88 and 167 were inventoried in April and May, 1981.

Results

Link 87 - Link 87 traverses an area of generally average or above average scenic-quality with high visibility from adjacent residences, travel routes (e.g., Highway 95) and key observation points. The overall visual sensitivity is high for the agricultural areas and the existing N.R. Adair Park.

Link 88 - Link 88 crosses an area of average or below average scenic-quality. Visibility from nearby residences and travel routes would be moderate-to-high.

¹School-district number.

²Primary tax-rate area.

Link 167 - Link 167 traverses basin landscapes that range from above average to below average, scenic-quality. The alignment crosses the Sand Dunes, identified as an area of high visual sensitivity, and would be highly visible from Interstate 8 (I-8) and associated rest areas.

Acoustical Characteristics

Acoustical characteristics for Links 87, 88 and 167 were inventoried in April and May 1981.

Results

Link 88 - Three residences were identified as noise receptors on Link 88, which is located in an area of residential and commercial and industrial land-uses. Typical day-night sound levels associated with residential land-use are between 48 and 65 dBA, and for commercial and industrial land-uses are between 60 and 80 dBA.

Links 87 and 167 - No noise receptors were identified on Links 87 and 167, which are located on agricultural and unpopulated land. Typical day-night sound levels associated with agricultural and unpopulated lands are between 35 and 47 dBA.

THE CULTURAL ENVIRONMENT

Archaeological Resources

No additional surveys were conducted along Links 87 and 167 since both links are entirely located within previously studied links. Five and one-half sample transects (1/8 by 1 mile) were surveyed in April and May, 1981 along the centerline of Link 88.

Results

Link 87 - Although no sample transects were surveyed along the centerline of Link 87, the link crosses a transect previously surveyed. One previously recorded site and an isolated find occur along or near the centerline. Most of Link 87 (3.6 miles) has a high probability for encountering archaeological sites.

Link 88 - Link 88 includes areas of high, moderate and low probability. A portion of one transect previously surveyed lies in the only area of high

probability, which is located along Gila River terraces. There are no recorded sites. A high probability for encountering archaeological sites occurs for 0.1 mile along the centerline of Link 88.

Link 88 also has an extensive area of moderate probability where there is one previously recorded site. Two transects and a portion of a third transect were surveyed in the moderate area and eight sites and an isolated quartzite flake recorded. There are 11.8 miles of moderate probability for encountering archaeological sites along the centerline of Link 88.

In the one area of low probability on Link 88, two transects and a portion of a third were surveyed. No sites were recorded. A low probability for encountering archaeological sites occurs for 10.3 miles along the centerline of Link 88.

Link 167 - Link 167 has areas of high, moderate and low probability and an identified special area (ISA). The ISA (Picacho BLM sensitivity area), located at the northern end of the link, has more than 50 recorded sites primarily consisting of sleeping circles, lithic scatters and trails. Three sites and three isolated finds were recorded in portions of two transects that lie within the ISA. One site, which covers an entire transect, consists of sleeping circles, lithic remains and trails. The ISA extends for 1.2 miles along the centerline of Link 167.

There are two areas of high probability located at the northern end of the link, just south of the Quechan Indian Reservation, with more than 100 sites (lithic scatters, sleeping circles and trails). Portions of the two transects that lie within the ISA are also within the high probability areas as well as another transect where one site covering the entire transect was recorded. The high probability areas extend for 4.1 miles along the centerline of Link 167.

Several areas of moderate probability extend for 1.8 miles along the centerline of Link 167. No transects were surveyed and no sites recorded in these areas.

Two transects were surveyed in the two areas identified as having a low probability for encountering archaeological sites. An isolated flake has been previously recorded in the area, but no sites were recorded in the transects. There are 5.7 miles of low probability along the centerline of Link 167.

Historical Resources

Historical resources along Links 87, 88 and 167 were inventoried in April and May 1981.

Results

Link 87 - The McPhaul Bridge, listed in the Arizona State Inventory of Historic Places, and two sites with no official status (McPhaul Placers and the Gila Trail) are located on Link 87 within one mile of the right-of-way. Since the Historic Resources inventory was compiled, nomination papers for the McPhaul Bridge have been submitted to the National Register of Historic Places (Federal Register, July 28, 1981).

Link 88 - Four sites with no official status are located within one mile of the right-of-way on Link 88: the Mohawk Canal, Growler, Norton and Radium Hot Springs.

Link 167 - Link 167 crosses two historical resources with no official status: the Picacho Mining Trail and the Southern Pacific Railroad. In addition, Camp Pilot Knob, which has no official status, is located within one mile of the right-of-way.

Native American Cultural Resources

The inventory of Native American cultural resources was conducted in April and May 1981.

Results

Link 87 - A peak sacred in Quechan mythology is located about three-quarters of a mile east of Link 87.

Link 88 - The Mohawk Mountain range and a general habitation/activity area for representatives of the "Maricopa amalgam" in their migration up the Gila River are situated along Link 88.

Link 167 - Three Native American cultural resources are situated at the southwestern end of Link 167 in the Sand Hills region: sacred hills, a planting area and a gathering area. Also, Link 167 crosses a multiple-resource area in Picacho Basin and the Fort Yuma (Quechan) Indian Reservation, and passes south of the Cargo Muchacho Mountains, where a multiple-resource area that includes sacred sites is located.

ENVIRONMENTAL CONSEQUENCES

The impact assessment/mitigation planning process applied to Links 87, 88 and 167 is the same as that described in Chapter 5 of the DES and SDES and is therefore not repeated here. A summary of committed mitigation for Links 87, 88 and 167 is presented in Table 5-3(A)F, which should be reviewed in conjunction with Tables 5-1, 5-2 and 5-3(A) of the SDES.

A description of potential impacts to resources in the natural, human and cultural environments for Links 87, 88 and 167 is presented below.

THE NATURAL ENVIRONMENT

Air Resources

Results for Sets XVI, XVII and XVIII (Links 87, 88 and 167) are the same as those identified for air resources in the DES along corresponding links.

Geotechnical Features

No potential high impacts to geotechnical features were identified for Set XVI Route 2 - Link 87, Set XVII Route 2 - Link 88, or Set XVIII Route 2 - Link 167.

Ecological Resources

Set XVI Route 2 (Link 88) - Potential impacts to ecological resources on Link 88 would be generally low-to-moderate because of disturbance to good-quality vegetation and wildlife habitat, and special-status plant and wildlife species.

Set XVII Route 2 (Link 87) - Potential impacts to ecological resources on Link 87 would be low.

Set XVIII Route 2 (Link 167) - Potential impacts to ecological resources on Link 167 would be low-to-moderate because of disturbance to good-quality habitat for seven unique plant species and Andrew's dune scarab beetle in a sand-dunes area.

TABLE 5-3(A)F

LOCATIONS OF SELECTIVELY COMMITTED MITIGATION
APS/SDG&E INTERCONNECTION PROJECT

LINK	1. Access to follow Landform VISUAL	2. Close Access Roads ECOLOG Y	4. Non- specular Con- ductors VISUAL	5. Modify Tower Placement ECOLOG Y VISUAL	6. Modify Tower Spacing VISUAL	7. Reroute Line PARKS	9. Precon- struction Field Review GEOTECH.	10. Precon- struction Field Review ECOLOG Y
87	0.0- 3.6	1.0- 2.4	0.0- 3.6	1.0- 2.4 0.0- 3.6		1.0- 1.1	1.0- 3.1	
88			0.0-22.2	0.5- 3.2 4.8- 4.9 5.5- 7.2 8.0-12.2 14.5-22.2			5.4- 8.4 8.7-11.6	5.8- 5.9 6.9- 7.0 8.2- 8.3 9.7- 9.8
167			0.0- 4.6 10.1-12.8	10.0-12.8	10.1-12.8		0.0- 2.6 3.2- 9.9	10.0-12.8

THE HUMAN ENVIRONMENT

Land Use

Set XVI Route 2 (Link 88) - Potential impacts to social and economic land-uses were characterized as low or not identifiable. No potential impacts to park, preservation and recreation land-uses were identified for Link 88.

Set XVII Route 2 (Link 87) - Potential impacts to social and economic land-uses on Link 87 were also characterized as low or not identifiable. No potential impacts to park, preservation and recreation land-uses were identified on Link 87, principally because of committed mitigation to reroute the link west of N.R. Adair County Park, which would otherwise be crossed.

Set XVIII Route 2 (Link 167) - Potential impacts to social and economic land-uses on Link 167 would be low or not identifiable. The low impact-level would result from new-access requirements in an area of future industrial development. Potential impacts to park, preservation and recreation land-uses would be moderate or low. Moderate impacts would occur where the link crosses a proposed California State Preservation Area (Outstanding Natural Sand Dunes) and new access is required, and from crossing a BLM-ORV open area. Low impacts would result from crossing a BLM-ORV open area and BLM Concentrated Use Zone #553.

Socioeconomic - Construction and Fiscal Analysis

The maximum demand by construction workers for temporary accommodations could be met with existing facilities in Yuma without displacing tourists, winter visitors or migrant workers. Property-tax revenues generated for one year following completion of the proposed Project facilities would be as follows:

Set XVI Route 2 (Link 88) - \$225,000

Set XVII Route 2 (Link 87) - \$44,000

Set XVIII Route 2 (Link 167) - \$39,891

In addition, total output and total personal income in Maricopa and Yuma counties in Arizona and San Diego and Imperial counties in California (where Links 88, 87 and 167 are located) would rise as a result of construction expenditures, causing a minimal beneficial impact in the region.

Visual Characteristics

Set XVI Route 2 (Link 88) - Potential visual impacts on Link 88 would be moderate and would result from structures contrast and high visibility.

Set XVII Route 2 (Link 87) - Potential visual impacts on Link 87 would be high and would result from strong structures contrast and high visibility in the vicinity of N.R. Adair County Park.

Set XVIII Route 2 (Link 167) - Potential visual impacts on Link 167 would be generally moderate because of structures contrast and visibility. However, a significant (high) impact would result along one segment of Link 167 because of strong structures contrast and high critical visibility where the alignment crosses the Sand Dunes--an area of high visual sensitivity.

Acoustical Characteristics

Potential acoustical impacts for Set XVI Route 2 - Link 88, Set XVII Route 2 - Link 87 and Set XVIII Route 2 - Link 167 would be the same as those described in Appendix E of the DES.

THE CULTURAL ENVIRONMENT

Archaeological Resources

Set XVI Route 2 (Link 88) - Potential impacts to archaeological resources on Link 88 were characterized as high-to-moderate, primarily because of requirements for new or upgraded access for virtually the entire link. In addition, the probability for encountering sites is high for 0.1 mile and moderate for 11.8 miles along the centerline of the link.

Set XVII Route 2 (Link 87) - Potential high impacts to archaeological resources are also expected on Link 87 because of 3.6 miles of high probability for encountering sites along the centerline of the link, and requirements for new or upgraded access.

Set XVIII Route 2 (Link 167) - Potential impacts to archaeological resources on Link 167 were characterized as high-to-moderate, principally because of crossing an ISA (the Picacho BLM Sensitivity Area), for 1.2 miles in addition to 4.1 miles of high probability along the centerline of the link, and the requirement for new access.

Historical Resources

No potential significant impacts to historical resources were identified for Set XVI Route 2 - Link 88, Set XVII Route 2 - Link 87 and Set XVIII Route 2 - Link 167. All potential impacts to historical resources along those links were considered to be low.

Native American Cultural Resources

Set XVI Route 2 (Link 88) - Low impacts to Native American cultural resources may be expected along Link 88, particularly through the Mohawk Valley.

Set XVII Route 2 (Link 87) - A moderate visual impact to the sacred peak east of Link 87 is anticipated.

Set XVIII Route 2 (Link 167) - No impacts have been assigned to the three resource areas on Link 167 in the Sand Hills. High impacts have been assigned to the Fort Yuma Indian Reservation since the Quechan consider all of their ancestral lands as sacred. High impacts to the Picacho Basin multiple-resource area are anticipated. A low visual impact has been assigned to the multiple-resource area in the Cargo Muchacho Mountains.

COMPARISON OF ROUTES

In order to select environmentally preferred routes, routing alternatives in Sets XVI, XVII and XVIII were compared in terms of potential environmental impacts, using the same criteria and process described in Chapter 3 of the SDES. A brief description of results of the routing comparison is presented below and summarized on Table 3-9(R)F.

ENVIRONMENTALLY PREFERRED ROUTES

Set XVI - Mohawk Valley

Route 1 - Links 23b, 26
Route 2 - Link 88

Route 1 is the environmentally preferred route because it would have less impact to all resources except agriculture (potential hazard to aerial applicators). Route 1 is also preferred because it follows an existing utility corridor, and fewer environmental impacts would therefore result. Significant unavoidable adverse impacts within the Route 1 corridor described in the DES would be avoided because the proposed centerline has been rerouted to the north. Route 2 could have considerably greater potential impacts to archaeological and ecological resources, principally because the route is located in undisturbed land and requires new access.

Set XVII - Laguna Mountains

Route 1 - Links 40b, 41a, 74b, 76
Route 2 - Links 78a, 87

Cumulative impact characterizations for both routes in Set XVII are similar, so that Routes 1 and 2 may be considered environmentally comparable although neither is the environmentally preferred route. Route 1 is preferred for geotechnical, visual and archaeological resources and Route 2 for land use and ecological, agricultural, historical and Native American cultural resources. The potential impacts to park, preservation and recreation land-uses were not identifiable on either route, and for social and economic land-uses were only slightly greater on Route 1 because of a potential moderate impact to one light industry.

Set XVIII - Sand Hills

Route 1 - Links 126A(a), 134, 162, 163, 164, 165
Route 2 - Link 167

The differences between potential impact-levels for all resources and land uses on both routes in Set XVIII are so small that the routes may be considered environmentally comparable. The only difference in cumulative impact-levels is in ecological resources. However, while Route 1 crosses 0.8 mile more of special-status plants and habitat of Andrew's dune scarab beetle than Route 2, Route 2 requires new access and the sensitive area on Route 1 is disturbed by ORV activity.

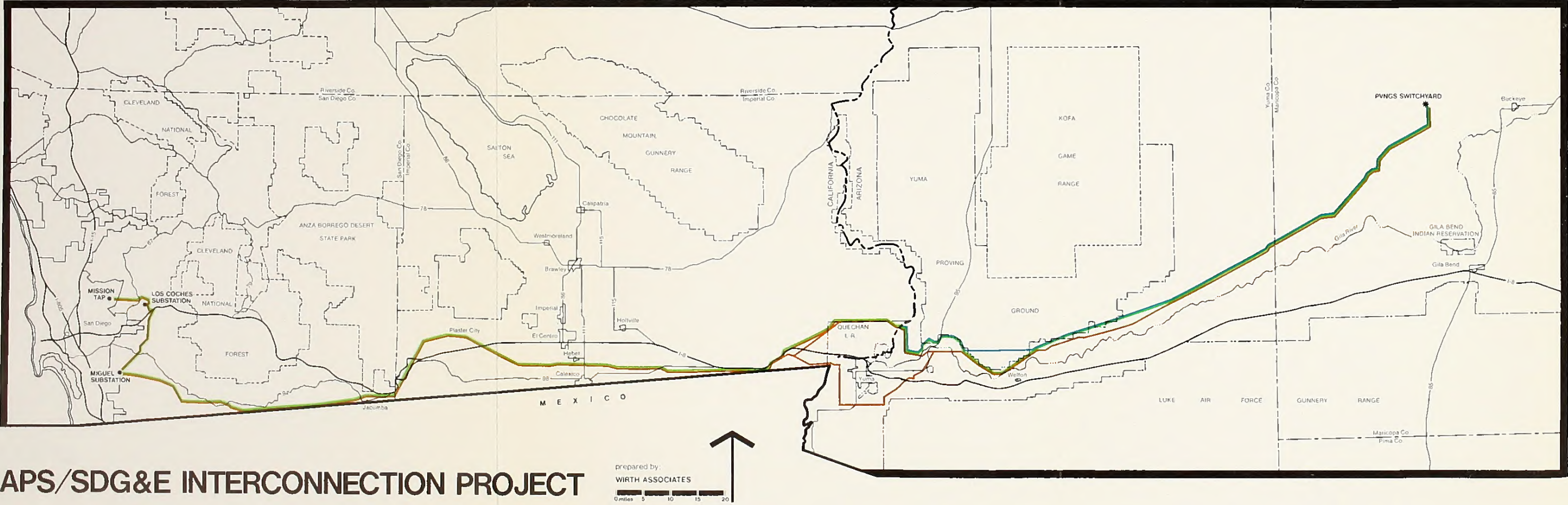


TABLE I-IF
PREFERRED ROUTES

Links	Env. Pref. Route		BLM Pref. Route	APPTL5C Rec. Route
	Southern	Northern		
2	146b	2 146b	2	2
3	147	3 147	3	3
5	149	5 149	5	5
6	150	6 150	6	6
7	151	7 151	7	7
23		23	23o	23o
26		26	88	88
29		29	29	28
30o		30o	30a	86
30b		30b	30b	78o
36		36	86	87
37		37	78o	41b
38		40o	87	48
43		40b	41b	49
56		41	48	51
59		48	49	
60		49	51	
62		51	101	
63		101	108	
65		108	110a	
67		110o	167	
68		165	126A(b)	
70		162 or 167 & 126A(b)	128b	
124o		163	128c	
124b		164	129	
125		134	133	
126A		126A	138	
128b		128b	140	
128c		128c	141	
129		129	142	
133		133	144	
138		138	145o	
140		140	155	
141		141	157	
142		142	159	
144		144	146b	
145o		145a	147	
155		155	149	
157		157	150	
159		159	151	

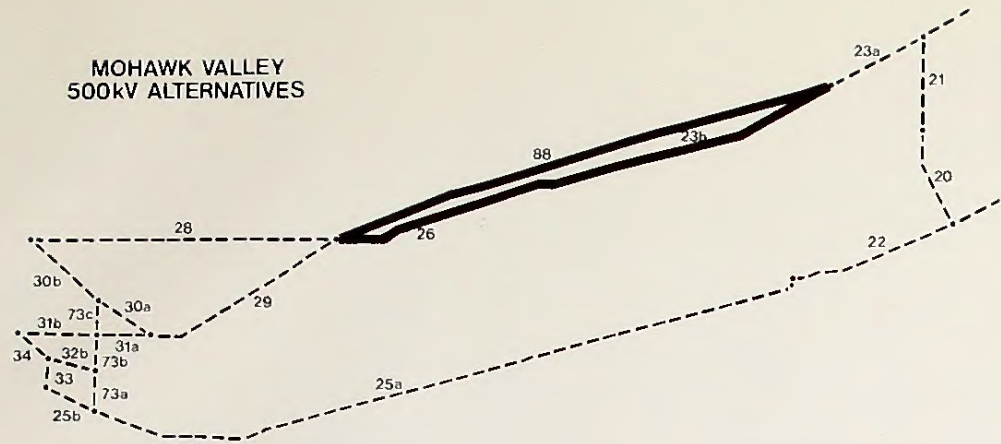
APPTL5C = Arizona Power Plant and Transmission Line Siting Committee

Figure 3-15 (R) F

TABLE I-IF
PREFERRED ROUTES

	<u>Env. Pref. Route</u>				<u>BLM Pref. Route</u>	<u>APPTLSC Rec. Route</u>
	<u>Southern</u>		<u>Northern</u>			
Links	2	146b	2	146b	2	2
	3	147	3	147	3	3
	5	149	5	149	5	5
	6	150	6	150	6	6
	7	151	7	151	7	7
	23		23		23a	23a
	26		26		88	88
	29		29		29	28
	30a		30a		30a	86
	30b		30b		30b	78a
	36		36		86	87
	37		37		78a	41b
	38		40a		87	48
	43		40b		41b	49
	56		41		48	51
	59		48		49	
	60		49		51	
	62		51		101	
	63		101		108	
	65		108		110a	
	67		110a		167	
	68		165		126A(b)	
	70		162	or 167	128b	
	124a		163	& 126A(b)	128c	
	124b		164		129	
	125		134		133	
	126A		126A		138	
	128b		128b		140	
	128c		128c		141	
	129		129		142	
	133		133		144	
	138		138		145a	
	140		140		155	
	141		141		157	
	142		142		159	
	144		144		146b	
	145a		145a		147	
	155		155		149	
	157		157		150	
	159		159		151	

APPTLSC = Arizona Power Plant and Transmission Line Siting Committee

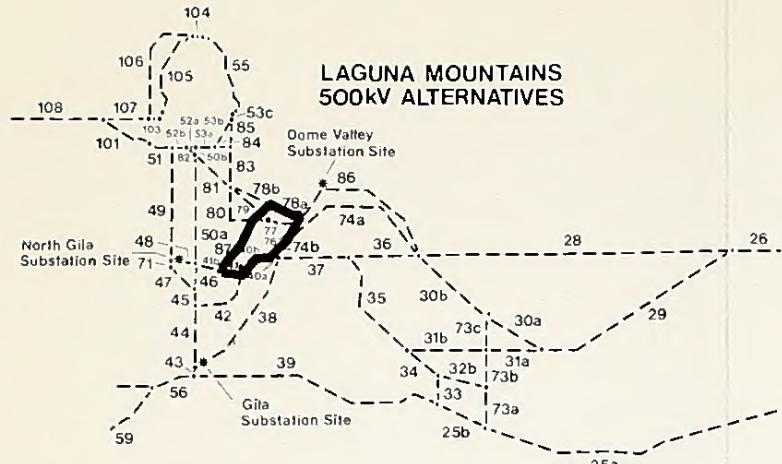


***SET XVI - Route 1 - Mohawk Valley**

The preferred route begins approximately 2 miles northwest of Texas Hill. The route, which is adjacent and parallel to the Southern Pacific Railroad, angles west-by-southwest for its entire length of 22.3 miles.

***SET XVI - Route 2 - Mohawk Valley**

Route 2 also parallels the Southern Pacific Railroad, which is approximately 1 mile south. The route angles west-by-southwest for its entire length of 22.2 miles.



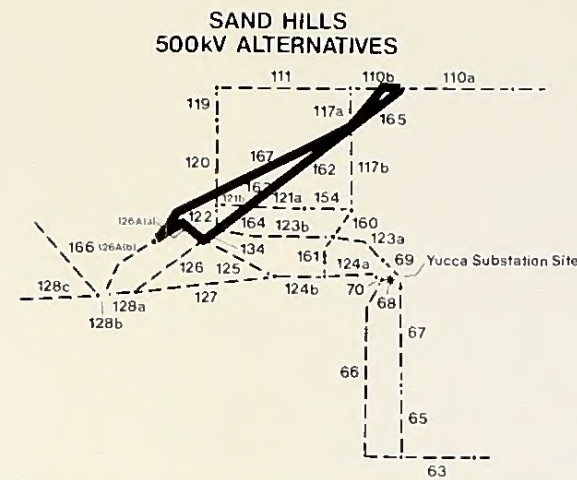
**LAGUNA MOUNTAINS
500kV ALTERNATIVES**

***SET XVII - Route 1 - Laguna Mountains**

Route 1 begins in the foothills of the Laguna Mountains at the western edge of Dome Valley. The route proceeds northwest through the Laguna Mountains for 1.4 miles, then turns southwest for 3.6 miles to its terminus near the Gila Gravity Main Canal. Route 1 is 5.0 miles long.

***SET XVII - Route 2 - Laguna Mountains**

Route 2 angles southwest for 2.3 miles, crossing U.S. Highway 95 and the Gila River, before turning west. The route then proceeds west and southwest, again crossing the Gila River, reaching its terminus near the Gila Gravity Main Canal. Route 2 is 4.6 miles in length.



**SAND HILLS
500kV ALTERNATIVES**

SET XVIII - Route 1 - Sand Hills

*Route 1 crosses the northwestern corner of the Ft. Yuma Indian Reservation at the base of the Cargo Muchacho Mountains. The route then proceeds southwest to the All-American Canal where it turns northwest, paralleling the All-American Canal for 2.4 miles to its terminus. The preferred route is 13.0 miles in length.

***SET XVIII - Route 2 - Sand Hills**

Route 2 begins along the boundary of the Ft. Yuma Indian Reservation and proceeds west to the base of the Cargo Muchacho Mountains before turning south and southwest. The route then crosses Interstate Highway 8 and the All-American Canal before reaching its terminus in the Sand Hills. Route 2 is 12.8 miles in length.

SET OR CONNECTOR	ALT ROUTE	LENGTH OF ROUTE	ENVIRONMENTAL CONSEQUENCES											ESTIMATED COSTS								
			GEOTECHNICAL FEATURES	ECOLOGICAL RESOURCES	SOCIAL AND ECONOMIC LAND USES	AGRICULTURAL RESOURCES	PARK, PRESERVATION AND RECREATION LAND USES	VISUAL CHARACTERISTICS		ARCHAEOLOGICAL RESOURCES	HISTORICAL RESOURCES	NATIVE AMERICAN CULTURAL RESOURCES	AGENCY / PUBLIC COMMENTS		SUMMARY							
XVI	*Rt. 1 Links 23b, 26	22.3	L	I	L-N	I	N	-	M Structures contrast, high visibility.	I	L-M	I	L	-	So. Pacific Pipeline Co. - Induced voltages to pipeline. WMIO - 2nd preferred route through district. So. Pacific Transportation Co. - interference with communication and electronic equipment. AZ Game and Fish - Gila River wildlife. Arizona Wildlife Federation - preferred route.	Route 1 is the environmentally preferred route because it would have less impact to all resources except agriculture (potential hazard to aerial applicators). Route 1 is also preferred because it follows an existing utility resulting in fewer environmental impacts. Route 2 could have considerably greater potential impacts to archaeological and ecological resources, principally because the route is located in undisturbed land and requires new access.	6,267,000					
	Rt. 2 Link 88	22.2	L-M	2	M-L Crosses 0.4 mile of special-status upland plant habitat.	L-N	2	N	-	M Structures contrast, high visibility.	2	H-M	2	L	2	L	-	Wellton-Mohawk Irrigation District prefers route 1 mile north to avoid aerial-applicator hazard and visual impacts.	6,243,000			
XVII	*Rt. 1 Links 76, 78b, 80b, 41a	4.6	L	I	M-L	2	L-N	2	M Crosses 0.57 mile, removing 0.15 acre.	N	-	H-M Structures contrast, high visibility.	I	M-L	I	L	2	M Visible from sacred mountain, village and petroglyphs.	2	Cumulative impact characterizations for both routes in Set XVII are similar, so that Routes 1 and 2 may be considered environmentally comparable. Route 1 is preferred for geotechnical, visual and archaeological resources and Route 2 for ecological, agricultural, historical and Native American cultural resources and land uses. The potential impacts to park, preservation and recreation land-uses were not identifiable on either route, and for social and economic land-uses were only slightly greater on Route 1 because of a potential moderate impact to one light industry.	1,386,000	
	*Rt. 2 Links 78a, 87	5.0	M-L	2	L	I	L-N	I	N	-	H-M Structures contrast, high visibility.	2	M-H	2	L	I	M-L Visible from sacred mountain.	I	Wellton-Mohawk Irrigation District prefers route that avoids agricultural impacts.	1,623,000		
XVIII	*Rt. 1 Links 165, 162, 163, 164, 134, 126A(a)	13.0	L	-	L	I	L-N	-	N	-	L Crosses one "concentrated use" area.	-	M-L High scenic-quality, structures contrast, high visibility.	I	M-H	I	L	-	M-H Crosses Quechan Indian Reservation and multiple-resource area.	-	The differences between potential impact-levels for all resources and land uses on both routes in Set XVIII are so small that the routes may be considered environmentally comparable. The only difference in cumulative impact-levels is in ecological resources. However, while Route 1 crosses 0.8 mile more of special-status plants and habitat of Andrew's dune scarab beetle than Route 2, Route 2 requires more new access and the sensitive area on Route 1 is disturbed by ORV activity.	4,809,000
	*Rt. 2 Link 167	12.8	L	-	L-M Crosses 2.8 miles of special-status plant habitat, 2.8 miles of Andrew's dune scarab beetle; new access is required.	L-N	-	N	-	L Crosses one "concentrated use" area and proposed preservation area.	-	M-L High scenic-quality, structures contrast, high visibility.	2	H-M Crosses Picacho Basin - area identified by BLM as having "very high" sensitivity	2	L	-	M-H Crosses Quechan Indian Reservation and multiple-resource area.	-		4,133,400	

PREFERRED ROUTES

(See Figure 3-15(R)F and Table I-1F.)

ENVIRONMENTALLY PREFERRED ROUTE

The northern and southern environmentally preferred routes identified in Chapter 3 of the SDES are still the environmentally preferred routes. However, Link 167 has also been identified as an environmentally preferred alternative to Links 134, 162, 163, 164 and 165 in the Sand Hills.

BLM PREFERRED ROUTE

The BLM Preferred Route on public lands is essentially the same as the northern environmentally preferred route, using Link 167, with two deviations. The BLM preferred route crosses the Mohawk Valley on Link 88 to the north of the environmentally preferred route and crosses Dome Valley and the Laguna Mountains to the north of the environmentally preferred route on Links 86, 78a and 87. The BLM has deviated from the environmentally preferred route to accommodate local preferences.

ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE'S RECOMMENDED ROUTE

The Arizona State Siting Committee's recommended route is essentially the same as the BLM preferred route in Arizona with one deviation. The Siting Committee's recommended route crosses the Muggins Mountains (and Yuma Proving Ground) on Link 28, whereas the BLM (and environmentally preferred) route skirts the Muggins Mountains to the south on Links 29, 30a and 30b. Table I-1 lists the preferred routes by link. In the event the BLM does not grant a right-of-way on Link 28, the Siting Committee recommends Links 29, 30a and 30b as its alternate preferred route.



PUBLIC COMMENTS & RESPONSES

CHAPTER 2 - PUBLIC COMMENTS AND RESPONSES DES AND SDES

INTRODUCTION

This chapter describes the public review process for the DES and SDES. Public comment on the documents was solicited from agencies, organizations and individuals and was received in the form of letters and remarks at public hearings. The response was voluminous. Therefore, every effort has been made to organize the mass of material in such a way that reviewers can quickly identify the principal issues of public concern.

Accordingly, 12 major issues raised by the public were identified by the preparers of the environmental documents and are summarized and responded to in the section following a description of the review process and procedures. Where possible, issues from letters and hearings have been summarized individually and are presented in tabular form in the section following the summary of major issues. Letters and remarks in hearings that could not be easily summarized are reproduced in full following the tables. An index listing all agencies, organizations and individuals whose comments on the DES and SDES appear in this document can be found at the end of the chapter.

PUBLIC REVIEW PROCESS AND PROCEDURES

The DES was filed with the Environmental Protection Agency (EPA) and the California State Clearinghouse and released to the public on 15 August 1980. Notice of filing and dates and locations of public hearings were published in the Federal Register on 22 August 1980 and in local newspapers in the Project area in California on 18 August 1980. The public comment period ended 15 October 1980. Public comments on the DES, from letters and hearings, along with changes in the project description and reevaluation of positions of various affected agencies and interest groups, formed the basis for additional environmental studies from which new alternatives were identified and subsequently compared in a supplement to the draft document. The SDES was filed with EPA and California State Clearinghouse and released to the public on 27 April 1981. Notices of filings and dates and locations of public hearings were published in the Federal Register on 30 April 1981 and in local California newspapers on 3 May 1981. The public comment period for the SDES ended on 26 June 1981.

Approximately 1200 copies of each document were sent to Federal, state and local government agencies, institutions, organizations and individuals for review and comment. In response, a combined total of 202 letters commenting on the DES and SDES were received by BLM and CPUC. All written comments and transcripts of hearings may be inspected at the following locations:

Bureau of Land Management
Arizona State Office
2400 Valley Bank Center
Phoenix, Arizona 85073

California Public Utilities Commission
Utilities Division, Room 3230
350 McAllister Street
San Francisco, California 94102

The BLM and CPUC reviewed and carefully considered all comments and responded to those substantive comments that presented new data, questioned findings of analyses or raised questions or issues relevant to the potential environmental impacts of the proposed Project and alternatives, as required by the National Environmental Policy Act, the California Environmental Quality Act and related regulations.

The principal issues of public concern raised during the public-review period are addressed in the following section. Specific BLM and CPUC responses to public comments on both the DES and SDES are presented in this document in the section following Summary of Major Issues/Concerns and Responses.

Formal public hearings on the DES and SDES, at which 148 people spoke, were conducted by BLM and CPUC. The BLM conducted hearings on the DES in Phoenix, Arizona on 1 October 1980 and in Yuma, Arizona on 2 October 1980. Approximately 30 people attended and 4 people spoke at the hearing in Phoenix, and approximately 170 people attended and 27 people spoke at the hearing in Yuma.

The CPUC and BLM conducted hearings on the DES in El Centro, California on 6 October 1980 and El Cajon (San Diego), California on 7 October 1980. Approximately 80 people attended and 17 people spoke at the hearing in El Centro, and approximately 250 people attended and 29 people spoke at the hearing in El Cajon.

The BLM conducted a hearing on the SDES in Yuma, Arizona on 16 June 1981 at which approximately 100 people attended and 21 people spoke. The CPUC and BLM conducted hearings on the SDES in El Centro, California on 17 June 1981 and in San Diego, California on 18 June 1981. Approximately 70 people attended and 29 people spoke at the hearing in El Centro, and approximately 65 people attended and 21 people spoke at the hearing in San Diego.

Tables 2-1F, 2-2F and 2-3F, which follow, contain comments on the DES, and Tables 2-4F, 2-5F and 2-6F comments on the SDES.

SUMMARIES OF MAJOR ISSUES/CONCERNS AND RESPONSES

Twelve broad issues or concerns were raised frequently by reviewers:

1. Electrical Effects
2. Property Value
3. Growth Impacts
4. Agricultural Impacts

- | | |
|--|---|
| 5. Alternative Energy Sources and Conservation | 9. Ecological vis-a-vis human values |
| 6. Bird-Collision Hazard | 10. Link 28 |
| 7. Underground Transmission Systems | 11. Validity of Corridor-Scale Studies and the Corridor-Selection process |
| 8. Use of Public vis-a-vis Private Land | 12. Avoiding Eucalyptus Hills |

Summaries of and responses to these issues are presented below.

Issue No. 1 - Electrical Effects

Health and safety - Numerous comments question the potential biological, health and safety effects attributed to the corona discharge (photochemical oxidants, electrostatic induction, magnetic induction) and request further research.

Interference of TV, radio and other communication signals - Electrical discharges from the proposed transmission line can produce interference that may disrupt electromagnetic waves such as television, radio and other communications signals.

Audible noise - Corona discharge creates audible noise along transmission lines. Objections have been raised to such disturbance.

Olfactory impacts - Ozone, the primary constituent of photochemical oxidants produced by transmission lines, has a pungent odor and is considered by some people to be annoying.

Response No. 1 - Electrical Effects

We believe that Appendix E of the DES, "The Electrical, Biological, Health and Safety Effects of 500kV Transmission Lines," adequately addresses and summarizes the status of present knowledge. Appendix E includes both a review of literature and the predicted values of electrical effects germane to the proposed Project. The predicted effects described represent the worst-case conditions and therefore present the worst possible impacts. Research indicates gaps in present knowledge on the subject. Like many other controversial subjects, results are inconclusive and their interpretations tend to support the positions of groups or individuals interpreting them. We are not able to determine which scientific conclusions are valid, but Appendix E clearly depicts the range of scientific uncertainty.

Health and safety - A vast amount of research on electrical effects is presently being conducted throughout the world. Neither BLM nor CPUC has

the capability or expertise to undertake scientific studies in this field. Refer to DES, Appendix E.

TV/radio reception interference - Based on experience in the operation of existing extra-high-voltage (EHV) transmission lines of similar design traversing similar terrain, radio interference and television interference are expected to cause minimal adverse impacts. Radio interference and television interference would be settled by the Applicants on a case-by-case basis. (See SDES Table 5-1 Generically Committed Mitigation, Measures 5, 10 and 12.) Refer to DES, page 5-36 and Appendix E, Section 2.3.

Audible noise - Anticipated audible-noise impacts are expected to be minor, and maximum noise-levels would occur during inclement weather. Refer to DES, pages 5-34, 5-35 and Appendix E, Section 2.1.

Olfactory impacts - The maximum ozone concentrations expected to be produced by the proposed Project will contribute so little to ambient conditions that the potential olfactory impacts are considered insignificant. Refer to DES, Appendix E, Section 2.4.2.

Issue No. 2 - Property Value

Visual and aesthetic impacts - Property owners expressed concern that the visual impact of the proposed transmission line (along with possible electrical effects) will cause a decrease in the aesthetic quality of property with a consequent decrease in the property's monetary value.

Compensation - Property owners are concerned about just compensation for property loss or other adverse impacts to property (e.g., existing or future uses) by the construction, operation and maintenance of the proposed transmission line.

Response No. 2 - Property Value

Visual and aesthetic impacts - We recognize that visual impacts would occur that can potentially affect existing or future property values. While various studies on these impacts have been conducted, some have found no substantial decrease in value attributable to transmission lines while others have shown the market value of adjacent property to be depressed.

Compensation - Landowners are compensated for an easement on or purchase of their land. Issues concerning the amount to be paid must be resolved through negotiation or condemnation proceedings.

Issue No. 3 - Growth Impacts

Inhibit growth north of Yuma and Calexico - The development of the City of Yuma is blocked on the north by the Colorado River, the Fort Yuma Indian Reservation and the California state line. Development is partially blocked on the east by the Southern Pacific main line and Interstate 8 (I-8). Residents expressed concern that the preferred route would limit or alter the direction of the community's growth.

The development of the City of Calexico is presently restricted by the International Border to the south, the All-American Canal to the north and the New River to the west. Residents expressed concern that the environmentally preferred route would inhibit development to the north.

Encourage unwanted growth - A number of residents are concerned that the additional energy provided by the proposed Project would encourage unwanted population growth and increase demands for resources, such as water and services.

Response No. 3 - Growth Impacts

Inhibit growth north of Yuma and Calexico - The introduction of an EHV transmission line has not, historically, inhibited growth in urban areas and, consequently, we do not believe it will inhibit growth in the Yuma and Calexico areas. Also, there is no evidence that the presence of I-8 and the Southern Pacific Railroad in Yuma or the four canals north of Calexico have deterred growth.

Encourage unwanted growth - We believe that the proposed action would be growth-accommodating rather than growth-inducing.

Issue No. 4 - Agricultural Impacts

Impact to Prime Farmland and Development of Agricultural Lands - Agriculturalists are concerned about the amount of land that would be removed from production as a result of tower placement along the preferred route. Construction of transmission lines is also seen as a limiting factor to the development of agricultural land.

Impact to Agricultural Crops and Practices - Reviewers believe the DES and SDES inadequately and/or inaccurately addressed impacts of transmission lines and towers on crop production and farming-related practices, such as crop losses, operation of irrigation and drainage systems, harvesting etc. Also, comments requested sources of information about crops and farming practices reported in the DES.

Aerial Application - Farmers and aerial applicators are concerned that transmission lines and towers are obstacles and hazards, particularly at night, to aircraft performing aerial application of pesticides, fungicides, defoliants, seed or fertilizer. Associated issues of concern are inadequate coverage of fields during aerial application around transmission lines and towers, and the additional costs incurred by avoiding these obstacles.

Electrical Effects - Comments have suggested that transmission lines and towers are hazards to field workers and interfere with the performance of mechanical and electronic farming machines and devices.

Response No. 4 - Agricultural Impacts

Impact to Prime Farmland - Physical impacts to prime and/or unique farmland, and loss of tillable land, are fully described in Appendix D of the DES. The environmentally preferred route in California would remove approximately 10.14 acres from production after construction of the proposed Project, and approximately 66.32 acres during construction, from the more than 500,000 acres cropped in the Imperial Irrigation District (reported by IID for 1978). In Arizona, the BLM preferred route would remove approximately 1.3 acres from production after construction, and approximately 7.7 acres during construction, from the more than 300,000 acres cropped in Yuma County (1978) and approximately 450,000 in Maricopa County (1978).

The limiting factor to development of agricultural land within the proposed Project area is availability of irrigation water and not the construction or presence of transmission lines. One example is the Panoche-McCall 230kV transmission line west of Fresno, California, which was constructed prior to intense development of irrigated agricultural land which it now spans.

Impact to Agricultural Crops and Practices - Crop losses, including yield reduction, and interference with or modification of agricultural practices, are described, and their associated costs quantified, in Appendix D of the DES. The Agricultural Study in Appendix D also quantified the physical and monetary impacts of crop losses for steel-lattice towers as part of the proposed action. In addition, potential impacts were evaluated for H-frame and steel-pole tower designs.

On an overall basis, the steel-pole tower reduces quantifiable impacts to agriculture compared to the steel-lattice towers. In California, annual costs of long-term impacts would be reduced by approximately 56 percent along the preferred route if the steel pole were used in lieu of steel-lattice towers. For Arizona, annual costs of long-term impacts would be reduced by approximately 51 percent if the steel pole were used in lieu of steel-lattice towers (see Tables 29 and 46 in Appendix D of the DES).

Most of the estimated monetary-impact reduction can be attributed to the lesser amount of crop acreage lost due to the presence of the steel-pole tower. The cost of additional farming operations, such as irrigation, weed control and equipment operations, would be only slightly reduced when comparing impacts of the steel-lattice tower with those of the steel-pole tower. Therefore, from the standpoint of the estimated cost of weed-control operations only, and in terms of being less costly to farm around, the steel-pole tower design offers a slight reduction in estimated impact costs.

One factor that may contribute to yield reduction is soil compaction, which results from construction activities and from maneuvering farm equipment around transmission towers. Deep ripping was the recommended mitigation for the proposed Project where soil compaction occurs because of construction activities. We believe that no soil compaction would result from the operation of the proposed transmission line, although there is no data available to quantify yield reduction during operation of transmission lines. Quantification of yield reduction during construction activities was included in the Agricultural Study, Appendix D, of the DES.

Other agricultural impacts include impacts to irrigation and drainage systems. SDG&E and APS have indicated they would repair any tile drainage-systems damaged during construction activities and would attempt to minimize such occurrences by consultation with farmers and modification of tower placement. The post-construction effects of transmission towers on the performance of drainage systems should be minimal to nonexistent. Tower footings (described in Figure I of Appendix D of the DES) should not act as impounding barriers to groundwater flow to field laterals; rather, water would flow around tower footings to the laterals.

Surveys indicate a predominance of furrow, flood or solid-set hand-move irrigation systems within the Project area. Impacts on furrow- and flood-irrigation operations are discussed in Appendix D of the DES and quantified for construction and operational years. Additional costs of row-crop irrigation within or around transmission towers result primarily from reforming and checking performance of the furrows during irrigation. No additional costs of flood irrigation were discerned. An additional one and one-quarter hours for furrow irrigation per transmission tower would be required for reforming and checking water flow around the transmission-tower base if crops were not planted within the tower base. ("The Effects of Transmission Lines and Towers on Agriculture," Resources International, Inc., 1978.) There are no quantifiable monetary impacts of transmission lines on solid-set hand-move sprinkler operations.

The impact of transmission towers on harvesting operations consists of the additional time and money expended on maneuvering a harvester around a tower. For example, an additional 20 minutes is required to maneuver a cotton harvester around a transmission tower. Impacts on harvesting opera-

tions were quantified for all crops addressed in Appendix D of the DES. However, additional costs of harvesting broccoli were not quantified because a pick-and-throw harvesting method was assumed which would require no additional time to harvest around towers.

An alternate method for harvesting broccoli is by using mechanical picking-aids, such as the Likens harvester, which consists of a conveyor behind which pickers walk and place cut broccoli heads, which are then conveyed to a side-following truck for removal from the field. The harvesters, which are quite wide, typically span 25 to 30 beds. But because of possible structural problems with some harvesters, it is recommended that they not be driven over beds during turning; other harvesters, structurally sounder, should be used instead. A typical harvester would require approximately 45 minutes for picking per tower if the harvester cannot turn in the field across beds. Additional costs per tower would range between \$200 and \$225. In 1978 broccoli made up only 0.2 percent of the total cropped acres within the Project area. None was observed growing along the preferred route during field surveys, although it was found on other link centerlines.

Crops addressed in the Agricultural Study (Appendix D of the DES) were inventoried in the field-by-field survey conducted in October and November of 1979. The inventory mapped growing crops along the centerline of each proposed link. Crop distribution along the centerline of the links served as the basis for subsequent calculations of physical and monetary impacts upon agriculture. Inventory results are presented in Tables 1 and 3 of Appendix D. Cantaloupe were found during the field inventories, and, although carrots were not observed in the fields, they were added as a crop in the double-cropping consideration.

Double-cropping practices were factored into the quantification of monetary and physical impacts on agriculture. Data from the Imperial Irrigation District for 1978 indicate that approximately 91 percent of lands planted in annual crops were multicropped, and the Agricultural Study took into consideration the multiple-cropping percentages when physical and monetary impacts to agriculture were calculated. Crops chosen to represent those used in a double-cropping scheme in California were processing tomatoes, barley, wheat, spring cantaloupe, carrots and sorghum. Crops used to represent those used in a double-cropping scheme in Arizona were spring cantaloupe, barley, wheat and sorghum. These crops were selected for the agricultural study because they represented the crops most likely to be double-cropped, based upon county-reported acreages.

Typical farming practices for the crops grown in Imperial County were described in the Agricultural Study as presented in a publication entitled "Guidelines to Production Costs and Practices - 1979 - Imperial County Crops," published by the University of California Agricultural Extension.

Typical farming practices for the crops grown in the Arizona Project-area came mainly from several publications: "1979 Arizona Field Crop Budgets" for Maricopa and Yuma counties, published by the Cooperative Extension Service of the University of Arizona; and a series of single-page tabulations of variable costs per acre of producing vegetable crops by Fred Harper, Area Vegetable Specialist, Cooperative Extension Service, University of Arizona. Conversations with farmers and farm advisors in the Project area also contributed to determining farming practices.

Aerial Application - We agree that transmission lines and towers present difficulties to aerial applicators and additional costs. We also recognize the hazard posed by transmission lines and towers to pilots at night, when up to 40 percent of aerial application takes place in the Project area. This issue, including the incidence of accidents, was addressed in Appendix D of the DES, pp. D-19 and 21.

At present there is no consensus on how best to increase visibility of conductors and towers, although pilots have recommended the use of reflective tape and tower lighting. The only known instances where utilities illuminate transmission towers in agricultural areas are in the vicinity of airstrips controlled by the Federal Aviation Administration (FAA), whose regulations do not apply to farm or rural airstrips used by aerial applicators and located outside FAA jurisdiction.

The Civil Aeronautics Act of 1958 established a minimum flying height of 500 feet for all civil aircraft. However, the 500-foot requirement has been waived for aerial applicators, and there are, at present, no legal restrictions on such pilots for flying under high-voltage transmission lines or near transmission towers.

Barring the presence of other obstacles - such as haystacks, trees and telephone poles - and given adequate visibility, aerial applicators typically fly beneath high-voltage transmission lines, make clean-up passes around transmission towers or sidedress parallel to transmission lines in order to optimize coverage.

In the interest of general safety, most aerial applicators first familiarize themselves with the terrain and potential hazards where they are scheduled to fly, and allow adequate margins of safety between their aircraft and transmission lines and towers.

Aerial applications in areas where there are transmission lines and towers have attendant costs for additional time, fuel and labor, which were quantified in Appendix D of the DES (pp. D-18, 21). Generally, aerial applicators do not charge farmers for additional time, labor or fuel costs. However, growers are charged for the additional amount of pesticide materials used in performing clean-up passes. Also, surveys indicate that additional insecticide, fungicide,

defoliant, seed and fertilizer ground-applications were not being made by farmers in areas suspected of being inadequately treated - either because farmers felt it unnecessary or were unable to perform ground applications ("The Effects of Electrical Transmission Lines and Towers on Agriculture," Resources International, Inc., 1978).

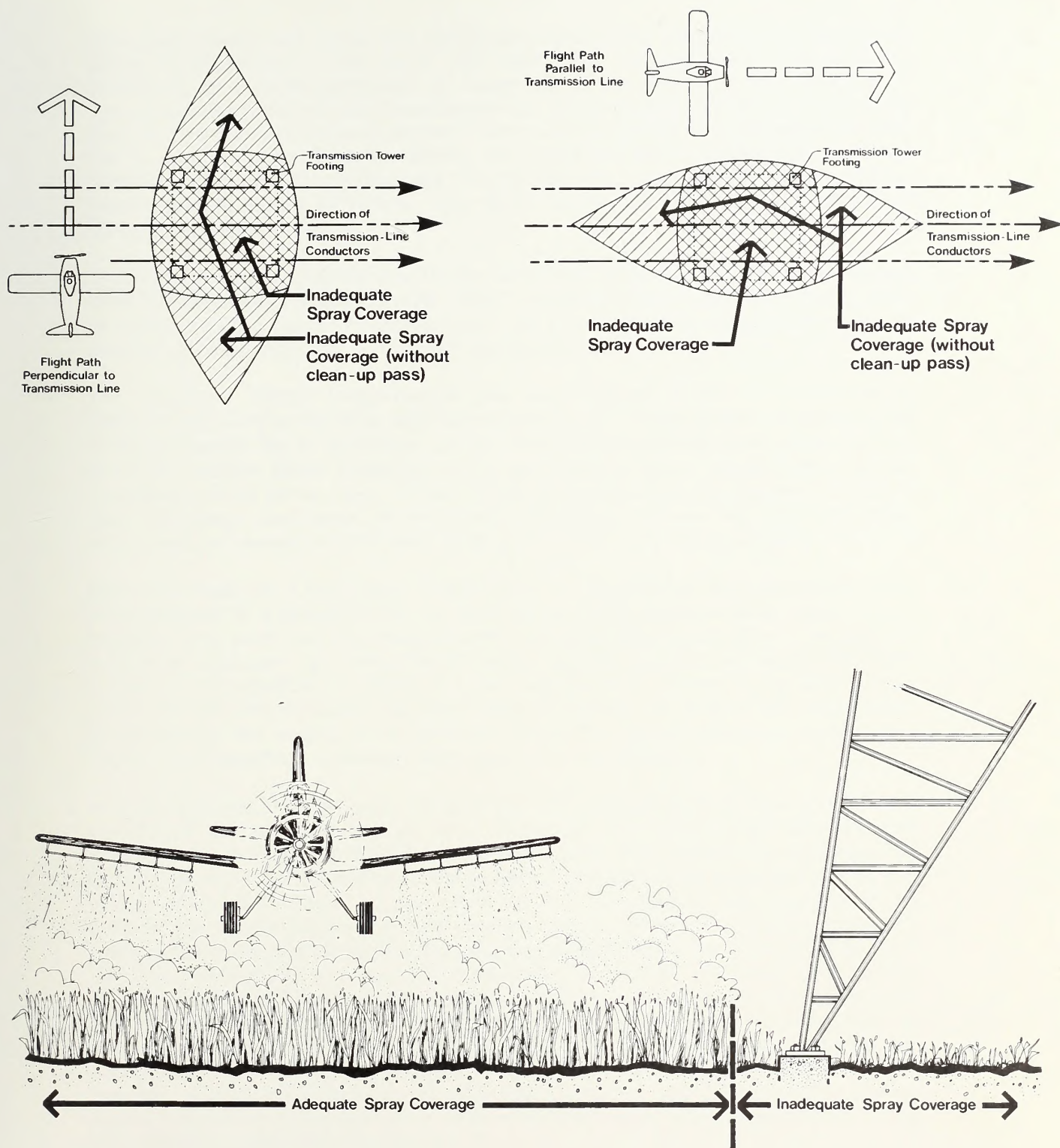
Ground applications of herbicides are commonly made under and around transmission towers several times a year to control weeds, generally at the time of ditchbank and/or fence-line sprayings. These costs are quantified in Appendix D of the DES.

The effectiveness of aerial-application coverage depends on the orientation of the transmission lines with respect to field rows, or the direction of flying passes with respect to the transmission line - the two most common being a flight-path perpendicular to the transmission line or parallel to the transmission line (see Figure F-1). In both cases, assuming there are no obstacles under the line and that the pilot has adequate visibility, the area of inadequate coverage, without clean-up passes around the tower, is represented in the sketches by the hatched teardrop area around the tower. The cross-hatched area represents the inadequately treated coverage after clean-up passes.

There are two factors that tend to minimize the area of inadequate treatment. The first is the effective swath-width, which normally extends five to fifteen feet beyond the wing span of the aircraft, and depends on spray-droplet size, the ratio of spray-boom to wing length, flight altitude, temperature, aircraft size and wind speed and direction (see Figure F-1). The second factor is the drifting of spray material towards the tower as a result of flying perpendicular to the direction of the wind, a condition that does not always occur.

Research has indicated ("The Effects of Electric Transmission Lines and Towers on Agriculture," Resources International, Inc., 1978) that whether reduced crop-yield around transmission towers is attributed to soil compaction, improper irrigation or inadequate spray-coverage, the area of influence is, at maximum, approximately one-quarter acre. Thus, the allegation that 12 acres in an 80-acre field would be inadequately treated cannot be substantiated, assuming normal operating conditions. It is much more likely that an area of one-quarter acre or less would receive less-than-desirable treatment. Crop-yield reduction in the area of influence was discussed in Appendix D of the DES (pp. D-17, 19 and Figure 6).

Inadequate coverage may also result when aerial applicators need to rise from application altitude in order to gain clearance over a transmission line in an adjacent field. This condition can be corrected by performing a pass perpendicular to the normal flight direction, if there are no obstacles located at field boundaries that force the pilot to begin "climbing out" before reaching the end of the sprayed field.



EFFECTIVENESS OF SPRAY COVERAGE

Figure F-1

Increased weeds and pests are likely to result from inadequate coverage of aerial applications. The need for additional weed-control measures is described, and costs assessed, in Appendix D of the DES (pp. D-18, 21). Ground applications around tower bases can be accomplished at the same time ditches and fence-lines are sprayed, provided access is not precluded by wet fields. The problem of access across wet fields has been substantially reduced because, according to preliminary Project designs, most of the towers will be located at the edges of fields. See SDES Table 5-1 Generically Committed Mitigation, Measure No. 8.

Electrical Impacts - Contact with electric lines is among the top three causes of accidental death in agriculture. Most accidents occur when hand tools, such as metal picking-poles, irrigation pipe, or boom types of equipment come in contact with distribution or on-farm service lines.

The proposed 500kV transmission line would have a ground clearance in Arizona and California of approximately 100 feet at the tower. Clearance at midspan would be a minimum of 41 feet in California, and 32.5 feet in Arizona, except when crossing citrus and pecan trees, when the midspan clearance would be 41 feet. These minimum clearances are generally greater than minimum clearances of most local distribution lines and on-farm lines, and therefore should present less hazard for contact by farm workers.

Inquiries made to Laserplane Corporation in California and at corporation headquarters in Dayton, Ohio, as well as to local land-leveling contractors, indicate they have had no problems with the laser equipment when used around and under high-voltage transmission lines. Lasers operate in the visible light range on a frequency of about 5×10^8 megahertz. There is no interfering signal at the transmission-line operating frequency of 1.25×10^2 megahertz. Since this is six orders of magnitude below the lasers operating range, the 500kV line should not interfere with laser leveling devices.

A wide variety of electronic monitoring and control devices for agricultural equipment is available and in use. Concern has arisen over whether the presence of an EHV electrical transmission line will affect the accuracy of performance of such electronic equipment. Photoelectric monitors are in the visible frequency range, on the order of 10^8 megahertz, and are therefore outside the transmission-line interference range. Some of the older two-way radio sets are amplitude modulated and can experience interference when near the line. Sets that use frequency modulation will not be affected. One survey of American and Canadian manufacturers and major marketers identified only two of eighteen firms that have reported nonspecific difficulties due to electrical transmission lines. Indications are that most manufacturers of electronic devices for agriculture recognize there are many sources for possible electrical interference with their product and intentionally design their products to resist outside electrical interference. (See Appendix E of the DES and Issue and Response No. 8.)

Issue No. 5 - Alternative Energy Sources and Conservation

Numerous comments question present and future energy-needs and suggest consideration of alternative energy sources (e.g., solar energy, wind power, etc.), energy conservation, load management or no action.

Response No. 5 - Alternative Energy Sources and Conservation

The estimated cumulative capacity available from conservation and alternative energy sources does not meet the stated need for either oil displacement or additional power. Refer to SDES, Chapter 3. The SDES statement of need reflects the latest California forecast by the California Energy Commission (BR III), which indicates the primary need in the San Diego area is oil displacement consistent with national energy policy and the Powerplant and Industrial Fuel Use Act of 1978, which discourage utility use of oil and gas. In the case of the Yuma area, where additional power is the primary need, the need can best be met by transferring power available in the Arizona Public Service (APS) main system. If maximum development of alternative energy sources and conservation could be realized, it would help displace some oil used by the utilities to generate electricity; however, their oil-dependence is so great that an alternative, such as the proposed interconnection, which is capable of yielding more significant and more immediate results must be considered as a superior option.

Issue No. 6 - Bird-Collision Hazard

Movements of waterfowl and other birds up and down the Colorado River occur as a result of migration and local flights to and from feeding areas or roost sites. Bisecting routes of such movement with overhead transmission lines can result in mortality or debilitating injury to birds in flight through bird-wire strikes. Underground construction of the transmission line was suggested as an alternative (see Issue No. 7).

Response No. 6 - Bird-Collision Hazard

To document potential bird-collision hazard, a year-long study was conducted along the lower Colorado River. Refer to Phase II Corridor Studies, August 1980, Wirth Associates, Volume I, Chapter 3, Addendum E, "Studies of Waterfowl and Other Birds Along the Lower Colorado River."

Located along the stretch of the Colorado River from two miles above Imperial Dam south to the International Border are some highly important wetlands that provide habitat for a wide array of bird species, some of which are listed among the threatened and unique wildlife of Arizona. The study identified those areas where a perpendicular crossing by an EHV transmission

line would have the least likelihood of causing significant levels of avian mortality through bird-wire strikes.

The area with the greatest diversity of species and density of individuals was located just below Imperial Dam and included West Pond and the settling ponds. Mittry Lake is very important to all species, especially the southeast portions. To the south, the areas around Shanty Town and the All-American Canal from the second bridge south of Imperial Dam, were areas of low bird usage. In general, the areas south along the river are relatively unimportant.

The area near the International Border supported the least number of birds and represents the most desirable crossing.

In heavily used areas, birds tend to fly at lower altitudes. Migrating birds and those individuals apparently flying long distances were observed flying higher than 150 feet above the surface of the river. The greatest number of birds, however, were recorded flying within 50 feet of the river's surface, followed by birds flying between 50 and 100 feet. These data suggest that areas of heavy use have more birds per hour flying at altitudes where potential conflict with transmission lines would be greatest (i.e., 0-100 feet). However, the amount of mortality that occurs where conflicts exist between overhead lines and waterfowl appears to be quite low.

The visibility of overhead wires is a major factor in the extent to which there is conflict with bird populations. Most collisions occur when visibility is obscured (e.g., night, foul weather). Locally, nocturnal migrants are probably passing through the lower Colorado River valley at high enough altitudes (except when landing or taking off) that serious conflicts with overhead lines are unlikely.

It appears that avoiding high-risk areas at Imperial Dam and Mittry Lake would reduce potential impact to regional waterfowl and other bird populations. It can probably be assumed that 500kV conductors will be highly visible to flying birds most of the time in southwest Arizona (i.e., few foggy days or nights, etc.) and that marking static lines with orange balls or some other device will help reduce bird-wire strikes in any location.

Issue No. 7 - Underground Transmission Systems

A number of comments suggested constructing an underground transmission system rather than an overhead system across residential areas and irrigated farmland in the Imperial Valley, Tecate/Dulzura and Eucalyptus Hills/Lakeside areas, and beneath the Colorado River and Salton Sea.

Response No. 7 - Underground Transmission Systems

Underground transmission was considered as an alternative technology in Chapter 3 of the DES and SDES, in which the feasibility, environmental benefits and adverse impacts, and economic costs were discussed for an oil-filled pipe system. The conclusion states that: "Considering the technical complications, economic and environmental costs, and accessibility (for repairs and maintenance), an underground ac system - either in whole or in part - is not a viable alternative." (SDES, Chapter 3, pp. 3-20, 21.) Since publication of the SDES, we have studied other types of underground transmission systems⁽¹⁾ in response to numerous requests from reviewers.

Although there has been underground construction of transmission systems in the U.S. since the late 1920s for lower-voltage distribution lines and some high-voltage (HV)⁽²⁾ systems, most HV installations have been constructed in congested urban areas, or as leads from generating plants or to substations. It is important to note that technological requirements for underground HV transmission lines are markedly dissimilar to those for lower-voltage distribution transmission-lines. Undergrounding of HV transmission lines is vastly more complex and costly, primarily because of problems associated with dissipating cable heat. "While it is relatively easy to dissipate the heat generated by the flow of current through the conductor to the air on overhead lines, the heat generated by losses in underground systems [e.g., (1) losses caused by conductor resistivity to current flow, (2) dielectric loss in the insulation, (3) shield losses from induced circulating currents in cable shields, and (4) losses from induced currents in the pipes] must be carried off through the electrical insulation system to the surrounding earth, but both the insulation system and the earth represent an obstacle to heat dissipation."⁽³⁾

The various types of HV underground transmission systems in service or undergoing research and development represent different technological or design approaches to solving problems of transferring large amounts of current without overheating or significant voltage drop over distances greater than a relatively few miles, as efficiently, reliably and economically as possible.

¹High-pressure oil-filled pipe systems (HPOF); low-pressure self-contained oil-filled pipe systems (SCOF); and compressed-gas-insulated transmission-line systems (CGITL).

²Greater than or equal to 69kV.

³Underground Transmission. State of the Art, Northeast Utilities System Companies, 1974.

In order to evaluate state-of-the-art underground transmission systems for the proposed action, BLM and CPUC retained the services of an expert in the field (see Chapter 3 p. 3-9f) with whose assistance the survey of state-of-the-art alternative underground transmission-cable-systems presented below was prepared. Following the survey is a chart (Table 2-AF), in which key aspects of nine underground transmission systems are summarized and compared, and a generic description of potential environmental impacts associated with underground construction of any of the systems.

Alternative Underground Transmission Cable Systems

General Summary

Design parameters and thermal limitations prohibit the use and application of underground transmission cable systems for long-distance transmission. For these reasons alone, without consideration of the cost factor, with notable exceptions (submarine) there are no underground transmission systems in the U.S. at voltages 230kV and above exceeding approximately 15 miles.

Practically all of the less than 3,000 circuit-miles⁽⁴⁾ of underground transmission cables 69kV and above have been installed in major cities, and/or for specific short-length installations including exits from generating stations, or in areas of severe systems congestion (such as major substations and switching stations). By comparison, as of 1 January 1979, there were an estimated 300,000 circuit-miles of overhead HV transmission lines. Costs of underground systems vary from 13-to-30 times the cost of equivalent overhead systems, depending on particular restraints, geography, urban-versus-suburban scenarios and systems requirements.

An approximate classification of U.S. cable systems through 1980 is as follows.

<u>Voltage Class kV</u>	<u>Cable Type</u>	<u>U.S. Total Installed three-phase circuit miles</u>
69-138	HV Extruded ⁽⁵⁾	139
69-161	SCOF	523
230kV	SCOF	2
500-550	SCOF	24 ⁽⁶⁾

⁴"Transmission Cable Operations 1980," June 1981, Edison Electric Institute.

⁵High-voltage extruded dielectric.

⁶Twelve miles of cable were damaged at Grand Coulee, July 20, 1981.

<u>Voltage Class kV</u>	<u>Cable Type</u>	<u>U.S. Total Installed three-phase circuit miles</u>
69-161	HPOF	1,809
230	HPOF	164
345	HPOF	227

Of the underground transmission cable systems in service, or concepts under development, only two cable systems are feasible (or viable) for installations of approximately 15 miles. These are the high-pressure oil-filled pipe-type (HPOF), and the low-pressure oil-filled self-contained (SCOF) cable systems. Both of these cable systems have been in continual commercial service in Chicago and New York City since the early 1930s.

The total quantity of underground cable systems in commercial service in the U.S. since the first installations in 1928 through 1980 is less than 3,000 circuit-miles. Less than 550 circuit-miles of the total are, or were, SCOF cables, while 2,200 circuit-miles, or four times that of SCOF, are HPOF. The preference in the U.S. for HPOF cable systems is based on their relative ruggedness, lower installation costs and reduced obstruction of vehicular and pedestrian traffic, and avoidance of congestion during installation.

Given the U.S. preference for HPOF cable systems, most of the HV cable systems manufactured and installed in the U.S. in the last five years, with certain exceptions, have been HPOF. At present there are only three manufacturers of HV cables for HPOF or SCOF in the U.S. Manufacturing facilities for SCOF are relatively limited and not of modern technology. Also, there is a limited number of experienced technical and supervisory personnel in both U.S. utilities and U.S. suppliers who have current and intimate knowledge of SCOF cable systems, for either turnkey or subcontracted installation. It may, therefore, be questionable if a large quantity of SCOF (3 x 20) circuit-miles of cable, for example, could be readily available in the U.S. by 1984.

Acceptable underground cable-systems, such as HPOF and SCOF, have specific and inherent variable characteristics that restrict or severely limit their use for long-distance (greater than 15-to-20 miles) ac transmission.

The major limitation on all HPOF and SCOF cable systems for 500kV ac transmission is the charging current. A cable system comprises an assembly of three cables, each of two concentric cylinders, of which the inner cylinder (conductor) is insulated by dielectric (nonconductor) from the outer cylinder (sheath or shield). Under ac operation the cables have an electrical capacitance which necessitates a charging current that increases according to

the length of the cable and the square of the operating voltage. For long-length transmission, the cumulative charging current can appropriate all the transmission capacity of the cable system (depending on cable size and/or thermal restraints). The critical length, or transmission length, for which all the capacity is consumed by the charging current and no capacity remains for useful power-transfer, is approximately 22 miles for typical 500kV HPOF paper-oil-insulated cable systems, and approximately 25 miles for a new insulation material under development, consisting of a laminate of paper-polypropylene-paper (PPP).

To enable 500kV underground transmission systems to deliver useable power, the charging-current limitations can be reduced by series or shunt reactive compensators, i.e., electrical equipment similar in external appearance to a large high-voltage power transformer (see Figure F-2). To provide operating and maintenance flexibility, the reactive compensators would require ancillary equipment such as disconnects, controls and interruptive circuit-breakers. These reactive compensators would be located at frequent intervals above ground.

For example, in a recent DOE study⁽⁷⁾ of long-distance transmission over a distance of 66 miles, five compensation stations spaced every 16.5 miles were required consisting of three intermediate and two end-point locations for a 500kV HPOF pipe-type cable system with PPP insulation. Such compensation stations require a secured or fenced surface land-area similar to that necessary for HV substations, particularly if the compensation equipment is to be disconnected and reconnected.

The second major parametric restraint of underground cable systems is their thermal limitation. All components of the high-voltage cable system under ac operation - conductor, insulation, shields, sheaths or pipe enclosures - are sources of electrical losses, which become evident as heat or, in a confined underground environment, result in component temperature increases. The dielectric insulation deteriorates under prolonged temperatures above 85°C (185°F) (except for relatively short emergency periods of a few hours), and can result in cumulatively increasing losses, leading to rapid electrical breakdown. A hostile thermal-environment that contributes to the increase in losses in increased temperatures and/or deterioration must be allowed for in the cable design and controlled throughout the service life of the underground transmission cable system.

⁷DOE Final Report December 1977 - "Underground Transmission Systems for Long Feeds to Urban Load Areas - Report No. HCP/T-2055/1, Section 4.4.1.3 (page 50) and Figure 8.2 (page 210).

Each and all of the detrimental conditions of the underground environment may require a reduction in the rated capacity of the underground cable system of some 25-to-40 percent to avoid overheating and consequential cable deterioration and electrical in-service failures. The combined effects of two or three unfavorable conditions can result in derating of the transmission capability by 60-to-75 percent.

For example, the derating of an otherwise normal capacity of a 500kV HPOF PPP-insulated pipe-type cable system by one unfavorable factor could be a reduction from 900 megavolt amperes (MVA) per circuit (normal rating) to 700 MVA and for a combination of two unfavorable factors, a derating to 550 MVA.

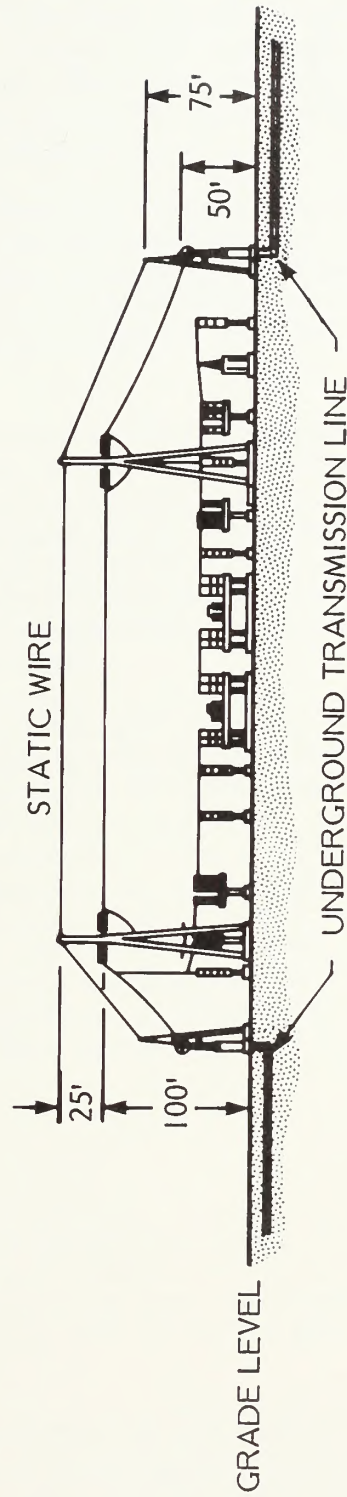
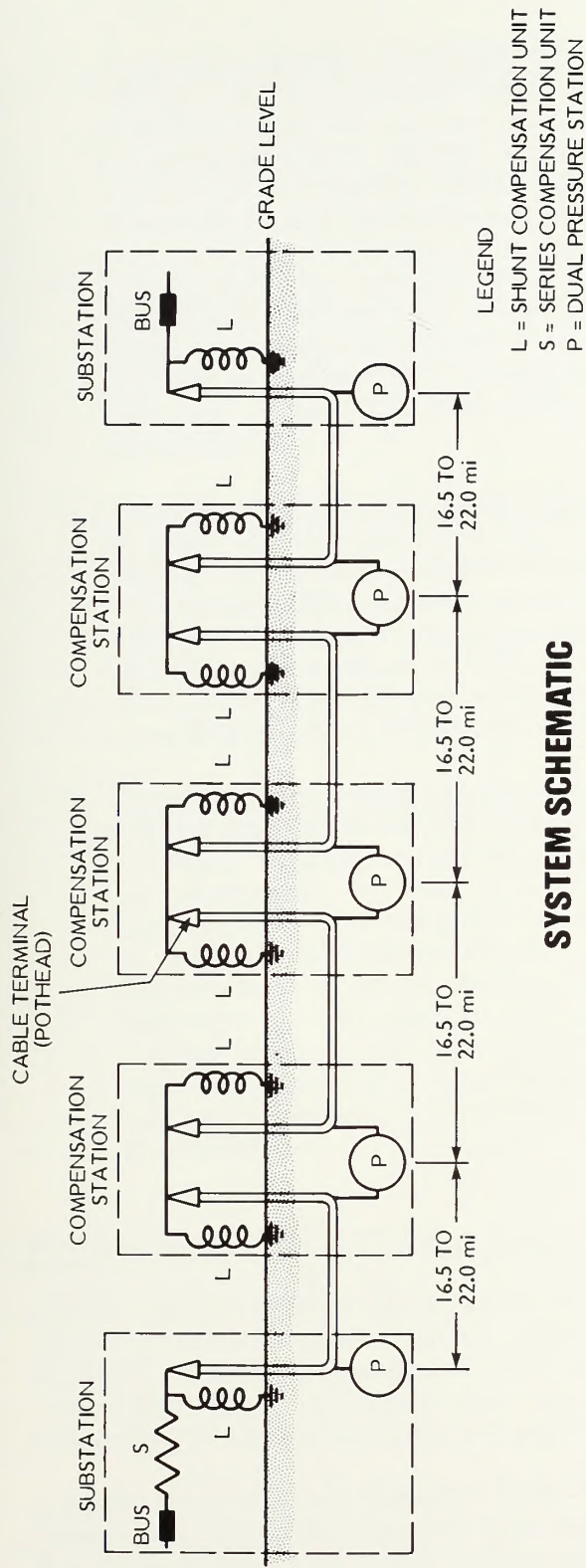
Measurements and assessment of environmental conditions would precede calculation of cable ampacities and would allow optimization of cable designs/sizes relative to alternatives alleviating unfavorable conditions.

For example, in order to achieve practical and economic cable sizes and ratings in an area of native soils of high thermal resistivity or thermal instability, it may be necessary to excavate and remove all trench spoil and replace the native soils with imported, thermally suitable backfill.⁽⁸⁾

Some of the major thermal conditions that must be recognized and allowed for in the design or that can materially influence the rating of underground cable systems are:

- i) Depth of Burial - Increase in the depth of burial beyond the normal 36-to-42 inches has the deleterious effect of preventing the transfer of generated heat to the ground surface.
- ii) Soil and Backfill - Thermal Resistivity - An inherent characteristic of the in-situ soil, other than the 60-to-90 thermal units normally used in design ratings of cable is a measure of the soil's capacity to transfer heat from around the cables to grade (surface). In-situ soil types such as sands, shales and alluvial silt, could have resistivities as high as 450 thermal units (reported for desert or dune sand). To prevent overheating of the cables, it would be necessary to remove the trench spoil and replace it with thermally acceptable (imported) backfill.

⁸Reference: In-house Studies - Native Soils and ABC Backfill. APS 230kV Sunnyslope/Country Club/Grand Terminal/Lincoln Ave. Substation.



TYPICAL 500 kV AC UNDERGROUND HIGH PRESSURE OR SELF-CONTAINED TRANSMISSION SYSTEM

- iii) Thermally Unstable Soil/Backfill - Certain in-situ soils, in addition to having high thermal resistivity, exhibit undesirable instability in the combined condition of low soil-moisture content and high heat-flux (concentrated heat outflow from the cable). Such thermal instability can result in rapidly increasing thermal-sensitivity, and consequent thermal-runaway and imminent electrical cable failure.
- iv) Excess Cover - Uncontrolled soil accumulation from embankment slippage or shifting sand and silt over the normal burial-depth in areas along the underground-cable route could have an unfavorable "thermal-blanket" effect greater than just the increase in burial depth, due to the lack of compaction and lack of moisture-content of the spoil accumulation.
- v) Average and Peak Soil-Temperatures - Increase in the average seasonal or peak soil-temperatures at or adjacent to the underground cable systems would have a direct derating effect on the safe ampacity of the underground transmission system. For example, if the normal ampacity rating is based on a maximum conductor-temperature of 85°C (185°F) and an earth ambient of 25°C (77°F), an increase of earth ambient to 40°C (104°F) would have a derating factor of approximately 15 percent, assuming all other conditions remain unchanged.
- vi) Higher Surface-Ambient-Temperature - Prolonged exposure of the ground surface above the underground cable-system trench would have a similar derating effect because the heat from the cable losses must be dissipated to the ground/air surface. Sustained surface-temperatures in prolonged sun exposures would be similar to an increase in soil ambient-temperature. For example, as the cable-surface temperature, at burial depth, is approximately 45-50°C (113°F-122°F), sustained ground-surface temperatures above 43°C (109°F) would provide little or no temperature difference to dissipate heat to the ground/air interface, and the cable temperature would increase above the maximum permissible cable-temperature before any heat could be dissipated.

PPP-Insulated HPOF or SCOF Systems

PPP-insulated HPOF or SCOF cable systems are generically similar to paper-insulated oil-impregnated cable systems in both HPOF and SCOF cable systems. Continual research over the last decade has been conducted in at least three countries (Japan, U.K. and the U.S.) on PPP or similar film-paper laminates for cable insulation and cable designs.

Despite the quantity and quality of the successful research and development in these countries on this promising laminate, which has important advances over the present cellulose paper cable-insulation, there are presently no high-

voltage PPP-insulated HV cable installations in commercial service other than a short trial-project at 275kV in 1980 on the Tokyo Electric Company system.

In the U.S., under DOE, EPRI and manufacturer funding, prototype 765kV-rated HPOF (PPP) insulated pipe-type cable systems have been designed, manufactured and lab tested. In 1981, a prototype advanced design of 765kV-HPOF was installed in Waltz Mill (near Pittsburgh, Pennsylvania) for two-years' extensive life-testing.

A four-year program was funded in 1980 by the electric utilities (EPRI) for application of PPP to the 138kV-550kV voltage ratings for HPOF. The proposed designs and electrical parameters are similarly suitable for SCOF-type cables.

Assuming successful completion of the project tasks of the four-year EPRI program by late 1984, one or two demonstration projects will be funded for a two-year assessment of commercial service. After the demonstration installation, and utility acceptance, the earliest availability for general commercial applications of either the HPOF or possibly the SCOF cable-type options would be late 1986.

EPRI is also investigating the application of PPP insulation for HV dc transmission-cable designs.

Technical, economic and design evaluation-studies under EPRI sponsorship have shown the following advantages for PPP over comparable high-voltage cellulose paper insulation:

- (1) A 25-to-35 percent increase in dielectric strength, allowing an increase in design operating-stress and/or a reduction in insulation thicknesses, and reduced cable dimensions, which would result in reduced shipping weights and costs.⁽⁹⁾
- (2) Due to an inherent lower specific-inductive-capacity (SIC) insulation characteristic, a reduction of 73 percent in the ac charging current is possible.
- (3) The cable dielectric losses are appreciably reduced, thereby reducing overall cable transmission-losses. More important, the cable losses are reduced to load current-related rather than dielectric or continuous voltage-related losses, resulting in an appreciable savings in the annualized costs of transmission cable losses over the life of the PPP cables.

⁹References - IEEE/ICC Minutes of Meeting, Philadelphia, April 1980 - DOE Final Report Document No. HCP/T-2055/I, December 1977. "Underground Transmission Systems for Long Feeds to Urban Load Areas."

- (4) The reduced cable losses and the improved thermal properties (reduced dimensions of the cable insulation) result in an increase in the MVA capacity.

As the charging current is dependent on the cable geometry, reduced cable dimensions, shipping weights and costs are gained at the expense of the reduction in cable charging current achieved by the lower SIC. The reduced dimensions are more cost-effective than reduced charging current, and the charging currents would be essentially the same for reduced-wall PPP as for full-wall paper. Therefore, the shunt reactive compensation required on PPP-insulated cables would be approximately the same as for paper-insulated cables.

SF₆ CGITL Systems

All Compressed-Gas-Insulated Transmission Line (CGITL) systems in their various configurations utilize a dielectric spacer support to maintain separation of conductor(s) and enclosure(s). Pressurized SF₆ (sulfur-hexafluoride) electronegative insulating gas is maintained at 50-to-60 pounds per square inch to increase the dielectric breakdown strength of the gas/insulator interface, and/or alternatively to effect a reduction in the enclosure diameter, for any given voltage rating. SF₆, when dry, clean and pressurized to the correct temperature/pressure relationship, has good electrical and thermal properties.

There are four configurations suitable or under development for underground transmission:

- (1) The three-conductor in one enclosure, rigid-type CGITL has been developed up to 362kV rating, and a trial demonstration system is being installed for two-year testing. The factory-sealed 60-foot lengths must be precisely aligned and profiled to the cable trench. Careful and clean welding by experienced welders is required to effect a continuous cable length.
- (2) Single-conductor rigid cables are also manufactured in 60-foot lengths and require installation of three horizontally spaced enclosures, field-welded into continuous sections. Difficulties may be experienced with alignment of sections and profiling of the trench excavation. Ratings up to 1200kV have been developed and there are limited commercial installations in short lengths at 138kV, 230kV and three short installations at 550kV in North America⁽¹⁰⁾.

¹⁰1975 BPA-235 meters; 1976 British Columbia Hydro-585 meters; 1978 TVA-335 meters. Total length of 1155 meters is approximately equal to 0.72 mile.

- (3) Research and development sponsored by the utilities has produced experimental prototypes of flexible single-conductor CGITL systems up to 362kV rating, which can be manufactured and shipped on large reels or drums in 330-foot lengths. At present there are no commercial applications of the flexible single-conductor system. Initial research and development is underway to achieve a 550kV rating in a practical enclosure-size within the maximum capability of the manufacturing/welding equipment.
- (4) The semi-flexible single-conductor system is a hybrid adaptation of some of the flexible features of (3) above, for the higher ratings designed in (2), the rigid type. This permits longer but nonreelable manufacturing lengths of 125 feet and reduces some of the difficulties of alignment and trench-profiling of the rigid type.

For the few trial installations of CGITL systems there has been limited success. The transfer of short-distance SF₆ substation technology to long-distance transmission lines has met with many problems, such as difficulties in maintaining absolute cleanliness within the electrical enclosure, diminished impulse and ac dielectric strength due to agitated or floating conducting particles.

The most general assessment from various supportive published literature and system analyses reports is that the CGITL systems are not cost-effective with other competing underground cable systems. For firm power transmission reliability a spare back-up CGITL underground circuit must be provided even though one circuit would have adequate capacity.

There are and will continue to be adherents and supporters of the CGITL systems recommending application for most undergrounding alternatives or projects. A thorough review of the published literature on the technical, economic, feasibility and reliability aspects indicates that CGITL systems can not be justified as a viable undergrounding option.

Direct-Current (dc) Systems

Whereas underground cable systems designed for three-phase ac transmission require reactive compensation for cable distances exceeding 20 miles to offset the ac charging current, dc cable systems do not require reactive compensation.

Underground dc transmission has been in commercial service in various parts of the world, principally as a result of complex system-planning and system requirements for specific geographic and site-related advantages. For example, in U.K., to provide an asynchronous intertie between Central Electricity Generating Board (CEGB) transmission systems in the environs of

London, the CEGB ultimately selected a 266kV dc SCOF cable system for the Deptford-Kingsnorth intertie. (By contrast, under similar system-planning circumstances involving high-voltage transmission into and around metropolitan Montreal, Hydro Quebec selected a 315kV ac SCOF cable system.)(11)

One of the classical site-specific power-transfer interconnections has been in commercial service at 250kV dc in New Zealand in a combination of dc overhead and dc submarine cables across Cook Strait (approximately 23 miles). This interconnection is rated at 600 MW, and this type of cable design and manufacturing are no longer available.

The highest-rated-voltage dc cables in commercial service were installed by British Columbia Hydro and Power Authority in 1975. The cables are 300kV dc submarine-type SCOF with steel-wire armor interconnecting Vancouver Island and the British Columbia mainland electrical systems.

Because of the instability of the 300kV overhead/underground dc system Vancouver Island intertie, it is essential for reliable firm power transmission to provide another interconnection between the north end of Vancouver Island and the north British Columbia mainland. The interconnection will be provided by 525kV ac submarine-cable transmission and related ac overhead land-located transmission.⁽¹²⁾ Similarly, one intertie from Sweden utilizes dc submarine cables (the Kontiskan cables) while a second intertie for another intertie between Sweden and Denmark, placed in service in November 1973, utilizes a 420kV ac cable.⁽¹³⁾

From these and other examples throughout the world, it should not be incorrectly assumed that dc underground transmission cables are the panacea, and the ultimate answer to all system-planning problems, environmental impacts of overhead-versus-underground transmission, or that they have site-selective superiority to ac transmission cables, both technically and economically.

¹¹ IEEE/ICC Minutes - Philadelphia, April 1980 Report.

¹² Pirelli Review No. 16, December 1979.

¹³ Conference Internationale de Grande Recherche Electrique, Paris, 1974. Paper No. 21-02.

High-voltage dc cable design is considerably more complex due to other technological characteristics. The dc cable-design is based on stress grading and the electrical resistivity of the paper insulation, which in turn is sensitive to the electric stress and the temperature profile across the insulation. Therefore the dc cable alternative is very vulnerable to the unfavorable changes in the thermal environment discussed previously under ac cables. Any one of these thermal conditions may cause a thermal or temperature excursion in the cable's insulation, resulting in a rapid electrical-stress increase and distortion, and thermal, and ultimate, electrical breakdown of the cable system.

In ac SCOF cables, the cable sheaths must be "crossbonded" and insulated to reduce sheath losses, and interrupters or diverters are required to alleviate or prevent damage from switching, or system-induced surges.

Similarly, in dc-SCOF cables, switching or system-induced surges can be damaging to the outer corrosion protection, electrical insulation or jackets over the outer sheaths. To reduce or control these surges to innocuous proportions the sheaths must be grounded at periodic intervals, approximately every two-to-three miles, and/or if the cables are armored, the sheaths and armor must be interconnected by insulated and protected metallic bonds. Although these bonds can be at joint locations and can be buried, they should be made accessible for periodic examination, maintenance and verification of integrity.

Underground high-voltage dc cables for a portion or portions of an ac overhead transmission-intertie would require ac/dc converter/inverter terminal equipment at each end of each dc cable undergrounding section. From past considerations and studies of ac/dc cable alternatives,⁽¹⁴⁾ the economic trade-off distance has been reported as 25-to-30 miles. Other considerations might dictate the need for asynchronous ties (as in the London Deptford/Kingsnorth 266kV dc underground cable system intertie), and different power frequencies (as in the Cross Channel England/France 200kV dc intertie, and/or immovable geographic sites, such as the Vancouver Island crossing and the Straits of Messina Crossing, Cook Strait Crossing, etc.).

¹⁴The New Zealand, South Island/Cook Strait/North Island 250kV dc transmission system.

Although there are laboratory developments in the U.S. of HV dc cables above 300kV (namely a 600kV HPOF pipe-type cable system, conditional on a two-year Waltz Mill extended life testing), there are no HV dc cables in service in North America above 300kV and 42 MW. Consideration of the feasibility of dc cable alternatives, even for one short section of an ac overhead intertie with a rating of 500kV and 1200/2000 MW normal/emergency rating would be a significant advance in the state of the art of dc cables. For example, the Electric Research Council and cable manufacturers undertook an extensive development program for 550kV ac cables in 1969. This program followed a similarly extensive program, started in 1955, to develop and test 345kV ac cables in a familiar transmission technology. As the development of dc underground cables would involve a similar long-term program, dc underground cables should in no way be considered the quick and easy, immediately available alternative to ac undergrounding or ac overhead for site-selective portions of the proposed 283-mile intertie, with 1200/2000 MW normal/emergency power-transfer requirements.

Description of Table 2-AF

Table 2-AF, Comparison of Typical 500kV AC Underground Systems, lists nine types of underground systems. Numbers 1, 2 and 5 are high-pressure oil-filled pipe systems. Number 1 is insulated with oil-impregnated cellulose paper (P); Number 2 with polypropylene-paper (PPP); Number 5 is an oil-circulating (O/C) system with oil-impregnated cellulose paper insulation.

Systems 3 and 4 are self-contained, oil-filled pipe systems insulated with oil-impregnated cellulose paper and polypropylene-paper, respectively.

Systems 6, 7, 8 and 9 are compressed-gas-insulated systems using SF₆ (sulfur-hexafluoride) under pressure as the insulating material.

Table 2-AF lists types of underground systems and data for describing or comparing key aspects of the nine systems. Column 1 illustrates the cable-and-pipe configuration in a typical trench cross-section view. Column 2 states the outside pipe diameter of each system. Column 3 gives the estimated capacity per circuit in MVA. Column 4 shows the number of circuits required for a normal rating of 1200 MW and an emergency rating of 2000 MW. Column 5 shows the number of linear miles in the U.S. of installation of each system. Column 6 shows the number of years each system has been in commercial service. Column 7 describes a few relative difficulties in maintaining and operating the nine systems and ranks the systems from one to nine, "I" representing the highest or most desirable ranking with the least difficulties. Column 8 describes the relative susceptibility or vulnerability of the nine systems to dig-ins or similar interference from the operation of machinery not connected with the transmission system. Column 9 shows the standard manufacturing length of cable for each system. Column 10 describes

the ease, or lack thereof, for detecting a line failure. Column 11 describes the relative difficulty of installation for a few significant factors. Column 12 describes the capability of each system for accommodating future load growth. Column 13 lists the minimum trench-width needed to accommodate the number of circuits necessary for an emergency rating of 2000 MW. Column 14 provides general remarks describing significant advantages/disadvantages of each system.

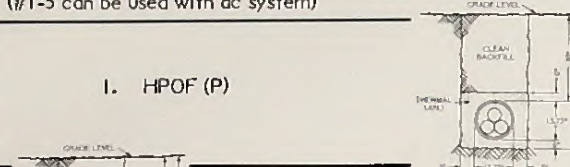
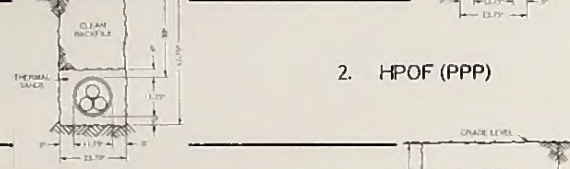
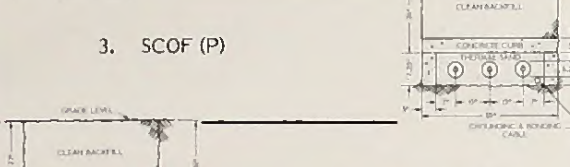
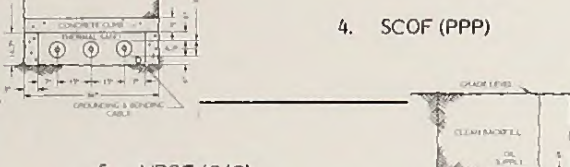
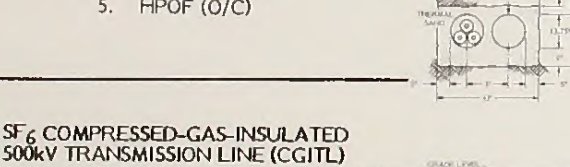
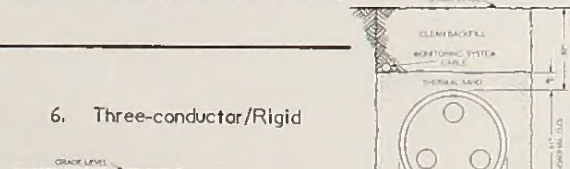
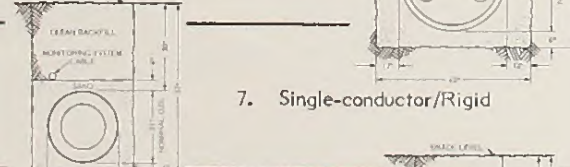
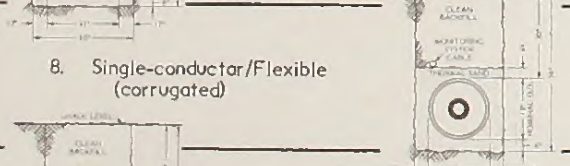
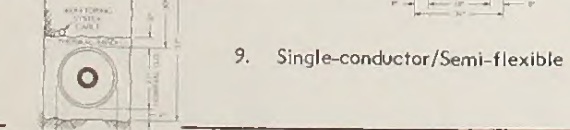
Environmental Consequences of Typical Underground Versus Overhead Transmission Systems

Introduction - In the areas where undergrounding the proposed transmission line was suggested (e.g., Salton Sea, Colorado River, Imperial Valley, Tecate/Dulzura, Lakeside and Eucalyptus Hills), environmental resources could be affected differently. Ultimately, potential impact to the environmental resources would depend upon design features of particular systems. In the following discussion a typical underground system is compared to a typical overhead transmission system and potential impacts resulting from an underground system are identified for each resource. The following assumptions are based on the Study of Environmental Impact of Underground Electric Transmission Systems (EPRI and DOE, May 1975).

Air Resources - Along the environmentally preferred route, an increase in short-term particulate emissions from construction activities is anticipated due to increased construction activities (e.g., continual trenching/excavation) required to build any underground system. In addition, fugitive dust (as a result of exposed soils) could potentially increase the impact to air resources during operation.

Soils - In undeveloped areas, a significant additional potential for increased erosion would result from the introduction of new access and the trench required for the entire length of the underground system. The heat dissipation from an underground line could remove soil moisture and change soil chemistry, thus increasing the erosion potential due to the lack of vegetation on the right-of-way. Should an oil spill occur during operation of the underground system, it could result in a loss of soil productivity and potentially the removal of affected soils (to avoid potential contamination of the aquifer). In all areas where undergrounding of transmission lines is considered, characteristics of local soil-types pose specific design-constraints to a greater or lesser degree. For example, the alluvial silt in the Salton Sea could create a thermal-blanket effect that might prohibit construction of any type of underground transmission system under the Salton Sea.

TABLE 2-AF
COMPARISON OF TYPICAL 500KV AC UNDERGROUND TRANSMISSION SYSTEMS

500kV SYSTEM TYPE & TYPICAL TRENCH CROSS-SECTION VIEW (not to scale)	APPROXIMATE PIPE DIAMETER (c)		ESTIMATED MVA CAPACITY/ CIRCUIT (b)		NO. OF CIRCUITS		LINEAR MILES IN U.S.	AVERAGE YEARS IN SERVICE	RELATIVE OPERATION & MAINTENANCE DIFFICULTIES	SUSCEPTIBILITY TO DIG-INS ETC.	MANUFACTURED UNIT LENGTH	FAILURE DETECTION	RELATIVE INSTALLATION COMPLEXITY	FUTURE LOAD-GROWTH CAPABILITY	MINIMUM TRENCH- WIDTH NEEDED (g)	REMARKS
	Normal (c)	Emergency (d)	Normal (c)	Emergency (d)	Normal (c)	Emergency (d)										
OIL-FILLED 500kV TRANSMISSION LINE (#1-5 can be used with dc system)																
1. HPOF (P) 	12"	814	950	2	3	None	-	1 Rugged and preferred system in the U.S. with service experience of more than 50 years. Very high dielectric strength and relatively good maintenance record.	Least Vulnerable (Rugged Pipe - 0.25" steel-pipe wall)	2200'/reel	Least difficult	2 Steel pipe installed in 60' lengths. Requires longer cable pulls between manholes. Least disruptive to traffic.	No	22'	The preferred system because most rugged and versatile, and 50 years of favorable service experience. Technology can be readily transferred from existing 345kV installation to 500kV and above.	
2. HPOF (PPP) 	10"	1010	1110	2	2	None	-	2 Rugged system and highest dielectric strength although no service record. Still undergoing research and development.	Least Vulnerable (Rugged Pipe - 0.25" steel-pipe wall)	3100'/reel	Least difficult	1 Least difficult because less welding required (fewer joints/cable welds). Smaller pipe and less oil than HPOF(P). Longer lengths between manholes.	No	12'	PPP will not be commercially available in the U.S. until 1986.	
3. SCOF (P) 	5"	1350	1500	1	2	1.3 (18 cables)(f)	3	4 Does not have a rugged pipe container. Has a potential pressure-maintenance problem in rugged topography.	Relatively Vulnerable (0.15" lead or aluminum sheath). Requires concrete cover.	2500'/reel	Relatively difficult	5 Continuous open trench required. Complex rigging requirements and special oil-refinement necessary.	No	20'	This system was used at Grand Coulee Dam because of vertical slope requirements.	
4. SCOF (PPP) 	4"	1700(e)	1900	1	1	None	-	5 Similar to SCOF(P) system, although no service record and still undergoing research and development.	Relatively Vulnerable (0.15" lead or aluminum sheath). Requires concrete cover.	3000'/reel	Relatively difficult	4 Continuous open trench required. Complex rigging requirements and special oil-refinement necessary.	No	20'	PPP will not be commercially available in the U.S. until 1986.	
5. HPOF (O/C) 	12"	1060	1190	2	2	None	-	3 Similar to HPOF(P) system, but has additional oil-circulation equipment and an oil-return line to be maintained.	Least Vulnerable (Rugged Pipe - 0.25" steel-pipe wall)	2200'/reel	Least difficult	3 Additional oil-circulation equipment. Requires oil-return lines and pumping stations.	Yes. Best capability for providing cooling capacity to reduce thermal restrictions. Additional cable can be installed in oil-return line if oil-return line is adequate in size. Refrigeration can be added to further increase capacity.	16'	Also preferred system because rugged and versatile, and 50 years of favorable service experience. Technology can be readily transferred from existing 345kV installation to 500kV and above. Oil circulation would mitigate against unfavorable thermal conditions.	
SF6 COMPRESSED-GAS-INSULATED 500kV TRANSMISSION LINE (CGITL)																
6. Three-conductor/Rigid 	40"	2000	2500	1	1	None	-	9 More susceptibility to flash-over. The mechanical strain is greater, which is critical when all cables are in one container.	Moderately Vulnerable (0.375" aluminum casing not as strong as 0.25" steel and large-diameter pipe).	60' unit	Most difficult	9 Most difficult (60' lengths). Largest amount of meticulous clean welding required. Alignment problems requiring special fittings and trench profiling.	No	6'	None is in existence for more than one mile in U.S. and Canada. No data are available on probability of system failure.	
7. Single-conductor/Rigid 	21"	2000	2700	1	1	None	-	6 Similar to three-conductor/rigid system, except three smaller cables.	Very Vulnerable (0.25" aluminum casing-3 pipes)	60' unit	Very difficult	8 Second most difficult with problems similar to three-conductor rigid. Smaller-diameter pipes.	No	9'	None is in existence for more than one mile in U.S. and Canada. No data are available on probability of system failure. Only 3 installations of 500kV underground gas systems totalling approximately 0.72 mile in the U.S. and Canada.	
8. Single-conductor/Flexible (corrugated) 	18"	2000	2500	1	1	None	-	8 Similar to single-conductor/rigid system, except smaller cable.	Most Vulnerable (0.15" aluminum casing)	330'/reel	Very difficult	6 Advantages of longer lengths, less welding and less alignment/trench profiling because of flexibility relative to three-conductor rigid system.	No	9'	No installations in commercial service, R and D only. No data are available on probability of system failure.	
9. Single-conductor/Semi-flexible 	21"	2000	2700	1	1	None	-	7 Similar to single-conductor/rigid system, except smaller cable.	Very Vulnerable (0.25" aluminum casing)	125' unit	Very difficult	7 Advantages of longer lengths, less welding and less alignment/trench profiling because of flexibility relative to three-conductor rigid system.	No	9'	No installations in commercial service, R and D only. No data are available on probability of system failure.	

(a) Representative cross-section for one cable only. Each circuit requires three cables.

(b) Estimated and adjusted ratings from several sources

(c) 1200 MW
(d) 2000 MW

(e) British Insulated Callenders Company Ltd.

(f) Before loss of 9-525kV cables at Grand Coulee Dam on 7/20/81

(g) To accommodate number of circuits necessary for emergency rating. Does not include access-road or construction requirements.

Hydrology - Some increase in siltation of surface water could occur during construction. The potential impact to existing aquifers because of an oil spill during operation is significant.

Seismicity - Dr. Jeffrey Johnson, a consulting geologist for the environmental studies for the proposed Project, testified in CPUC hearings held in San Diego on June 24, 1981 that "in the Imperial Valley area the reliability of that system [a pipeline system], in my opinion, would be less than a tower system." Dr. Johnson explained that during earthquakes, pipes carrying conductors would be less resilient and more subject to severance than transmission towers spanning a fault.

Ecological Resources - To date there has been little scientific investigation of actual ecological consequences from underground systems. The most significant impact to ecological resources would result from digging the trench for the underground system which would require the total removal of vegetation. Total removal of vegetation within the right-of-way could affect Federal- and state-protected plant species and possibly remove habitat for protected/regulated wildlife species (except in the agricultural land of Imperial Valley). Heat dissipation (rise in soil temperature) would potentially result in animal avoidance (burrowing, nesting, etc.) in the summer and potential attraction in the winter. In addition, revegetation could be restricted or prohibited due to soil heat and moisture removal (potential wilting of vegetation could also occur adjacent to the right-of-way). The actual effect of soil temperature increase would depend on the ecosystem affected. Although the bird-collision hazard (e.g., at the Colorado River and the Salton Sea) would be eliminated, removal of riparian habitat could potentially result in a greater impact to the ecological resources.

Land Use/Recreation - For the underground component a narrower right-of-way would be required. Therefore, potential physical impacts to land use within the study area should be reduced, although more and prolonged disruption of land uses (e.g., traffic) would occur during construction.

Agricultural Resources - A significant increase in agricultural impacts would occur in Imperial Valley because of the removal of all crops during construction and potential removal during operation in order to protect the underground system from accidental damage. Therefore, to protect the underground system, the area would be secured (fenced). A two-to-five acre compensation station would be required every 16.5 to 22.5 miles. Therefore, in a best-case situation, if approximately 20 miles of agricultural land were crossed by an underground transmission line (assuming minimum right-of-way of 24 feet), the result would be the removal of approximately 100 acres of

agricultural land versus approximately 10 acres with an overhead transmission line and steel-lattice structures for the same distance. Potential disruption could also occur to existing tile drainage systems, and access between fields and canal systems. (It should be noted that cables would not be placed within canals due to the cleaning requirements of the canals and the vulnerability of the cables.) The underground system, however, would reduce the potential hazard to agricultural aviators and improve the spray coverage.

Socioeconomic - A significant socioeconomic impact would be increased tax revenues that would accrue to tax jurisdictions crossed by the underground transmission line because of increased assessed valuation.

Visual Characteristics - In most areas a substantial reduction in visual impacts would result from the underground line since fewer structures would be above-ground. However, compensation stations placed in visually sensitive areas would increase visual impacts locally. In relatively undisturbed areas of southern San Diego County an increase in visual scarring, because of increases in access roads and trenching, excavation and backfill operations, would result in higher visual impacts.

Acoustical Characteristics - An increase in the impact to the acoustical environment of the study area is anticipated during construction and at the compensation-station locations during operation (the noise level at a compensation station is similar to that of a substation). Along the underground transmission line, during operation, no impact is anticipated for the acoustical environment.

Cultural Resources - Except in the agricultural lands of Imperial Valley, significantly greater impacts are anticipated for the archaeological resources because of the trench and access-road construction. No significant increase in impacts is anticipated for the historical and Native American cultural resources. However, depending on final project location, a reduction in the visual impacts to cultural resources could occur.

Conclusion - The principle environmental benefit of an underground system involves elimination of adverse visual impacts; however, on balance, the environmental benefits of undergrounding do not appear to outweigh the adverse impacts. Few studies have documented the impact of an underground system. Many of the potential environmental impacts would be similar to those resulting from pipeline construction. (In addition to the study previously mentioned, two studies - one for Bonneville Power Administration and one for the Department of Energy - are currently being completed.)

Although the reviewers identified that major savings to the agricultural, visual and ecological resources could result from utilization of an underground system, we feel this is not necessarily the case. In fact, greater impacts to the agricultural resources of Imperial Valley would result from total removal of the right-of-way from agricultural use. To the ecological resources, greater impacts would potentially occur in the Colorado River and Salton Sea areas (riparian habitat removal) and the Tecate/Dulzura areas (loss of Federal- and state-protected plant species and habitat removal). In the Imperial Valley a substantial reduction of the visual impact could occur; however, in southern San Diego County visual scarring of the landscape could potentially result in a significant impact.

Electrical Effects - In general, electrical effects would be significantly reduced on the underground portion of an underground system because of metals surrounding the electrical conductors. However, in the case of the single-conductor SCOF and CGITL systems there would be minor electromagnetic effects outside the metal enclosures, which would be greatly reduced by the surrounding earth. There are also induced ac voltages on the sheaths of single-conductor SCOF cables. During momentary fault or switching surge conditions, the induced voltages increase. However, the magnitude of the induced voltages under such conditions are considerably below the step- or touch-potential levels recommended by the Institute of Electrical and Electronic Engineers (IEEE).

Where the underground cables surface at substations and reactor-compensation stations, the electrical fields would be similar to those at substations. (See Chapter 3 of the SDES, and Chapter 5 and Appendix E of the DES.)

Other potential increased environmental impacts may also result from an underground system. For example, oil spills could significantly affect vegetation, wildlife, and hydrology (surface and subsurface). Additional effects including water-heating (effects are presently unknown), and an increase in utility rates to the consumer could result.

Reliability - An underground connection that is part of an intertie for firm power capability must have additional circuits to provide an acceptable level of service in the event of a cable failure. The discussion of cable failures that follows is taken almost verbatim from the Study of Environmental Impact of Underground Electric Transmission Systems, Electric Power and Research Institute and Department of Energy, EPRI 7826, May 1975.

Cable system failures are caused by internal or external causes. External causes include:

- "Dig-ins" from operation of construction equipment such as backhoes, trenching machines and pile drivers near the cable.

- Damage to underwater cables from dredging operations, from dragging ship anchors, from commercial fishing operations, and from stream scouring.
- Damage from ground failures such as landslides, fault rupture during earthquakes, differential settlement, and subsidence.
- Corrosion from natural causes or from exposure to soils contaminated by corrosive chemicals or stray currents.
- Pressure from backfill compaction work on other nearby underground facilities.
- Damage from failure of other nearby underground facilities such as oil pipelines, water mains, and gas mains.
- Damage to above-ground station equipment from earthquakes, floods, tornadoes and other natural hazards.
- Corrosion of cables installed above ground on highway bridges as a result of the corrosive chemicals used to prevent ice formation on the road surface in winter.

Internal causes include:

- Defects in manufacture or installation.
- Deterioration or breakdown of electrical insulation from thermal, electrical or mechanical stress.
- Thermal overload from prolonged operation at full emergency capacity or increases in thermal resistivity of surrounding medium.
- Induced voltages from uncontrolled system disturbances.
- Gradual deterioration (aging) of system components.

System failures range from minor problems which can be repaired without disrupting operation of the system to more extensive failures requiring abandonment and replacement of the installation. The consequences of these failures depend on the type of the system, the type and location of the failure, and numerous other factors such as the timing of the failure and the time required to make the repairs.

Interruption of service is one of the more significant consequences of system failures. Repair activities can require a few days to months and when the failure occurs at times of peak demand (not an unlikely occurrence with

internally caused failures), the remaining portions of the utility's underground transmission system may be overloaded in attempting to carry the load of the lost cable.

Cable failures frequently result in electrical short-circuits within the system. Short-circuits result from flow of electricity from a conductor to ground or between two conductors. These short circuits occur with explosive force and can significantly damage the cables and other system components at the point of failure. The short-circuits are short-lived since the installation is protected with circuit breakers which open automatically to stop the flow of current within a fraction of a second. During the brief short-circuit, however, extremely high currents can flow on external portions of the cable and attached equipment presenting a potential hazard to operating personnel and adjacent facilities.

Column 4 of Table 2-AF lists the number of circuits required for an emergency rating of 2000 MW. However, in the event one cable circuit is out of service for any reason, an additional circuit would be required for seven of the nine underground systems in order to maintain approximately 85-to-100 percent of the transmission capability. Only the HPOF (P) system with three circuits and the SCOF (PPP) system with two circuits could provide that level of capability without an additional circuit. The number of circuits required by the other systems in the event of a one-circuit failure is as follows:

HPOF (PPP)	3
SCOF (P)	3
HPOF (O/C)	3
SF ₆ (all systems)	2

The longest known installation of an oil-filled pipe system EHV (500kV) transmission line is 1.3 miles (incorrectly reported in the DES and SDES as 0.2 mile) under Grand Coulee Dam. On July 21, 1981 United Press International (UPI) reported that "...the cable overheated and burst into flames at Grand Coulee Dam...closing down three of the world's largest hydroelectric generators for several months...In all, nine separate cables...were destroyed in the fire, and Bureau of Reclamation officials said it could take more than a year to repair the damaged tunnel." The generators could be returned to service in several months by stringing overhead replacement cables. The incident at Grand Coulee clearly demonstrates the problems associated with maintaining reliable underground transmission lines.

Summary

In brief, the underground system has no clear environmental advantage relative to an overhead system; in fact, it may result in greater impacts for many resources. For construction of an underground system the energy

requirements would be approximately six times that of the proposed Project. Finally, "Considering the technical complications, economic and environmental costs, and accessibility, [for repairs and maintenance] an underground ac system - either in part or in total - is not a viable alternative." (SDES, Chapter 3, p. 3-21s).

Issue No. 8 - Use of Public Vis-a-Vis Private Land

Some of the comments suggest routing the proposed transmission line across public rather than private land.

Response No. 8 - Use of Public Vis-a-Vis Private Land

The environmental studies and analysis were based on resources and land uses, and not on land ownership or jurisdiction. Approximately 50 percent of the environmentally preferred route is located on public land.

Issue No. 9 - Ecological Vis-a-Vis Human Values

Many comments suggested that in the DES and SDES predominant consideration was given to ecological values at the expense of human values.

Response No. 9 - Ecological Vis-a-Vis Human Values

The BLM, CPUC, Applicants and environmental consultant are all aware of and have expressed concern for potential impacts from the proposed Project to people likely to be affected, their values, lifestyles, property and businesses, and feel that, to the extent possible, we did take these concerns into consideration. Scoping meetings, the public contact program, public hearings and public comment period for the DES and SDES provided the mechanisms for obtaining information about these concerns.

Nonetheless, we recognize that a problem exists in evaluating these impacts; for although direct impacts to the natural environment--such as ecological or geological impacts--can generally be quantified scientifically and mathematically, some human impacts can not be.

Also, in the broad view of our world as one large ecosystem, man is one element, neither more nor less important than all the others whose interests must be balanced and harmonized to preserve the total environment.

We feel that every effort was made in the environmental studies to consider human values and find a reasonable balance between ecological and human

values and that human values are reflected in all the elements of the environment that were considered (e.g., air resources, geotechnical features, ecological resources, cultural resources, visual characteristics and socioeconomic and park/preservation/recreation land-uses).

Issue No. 10 - Link 28

Many comments questioned the selection of Links 29, 30a and 30b (south of the Muggins Mountains) in preference to Link 28 (across the Muggins Mountains) for the BLM and environmentally preferred route. Local support for Link 28 was principally based on its avoidance of agricultural lands.

Ecological vis-a-vis human values - Specific comments questioned the BLM's preference for ecological values over human values (see Issue No. 9).

Wilderness values - Some comments requested an explanation of how the Muggins Mountains (a potential wilderness area) could be opened to mining but not used for construction of a powerline.

Response No. 10 - Link 28

Ecological vis-a-vis human values - See Response No. 9.

Wilderness values - Section 2(c) of the Wilderness Act of 1964 defines a wilderness as . . . "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

The Muggins Mountains area is presently being considered as a potential wilderness area. Until such time as its status is officially determined, the area is subject to BLM management under the regulations of the Interim Management Policy (IMP) and Guidelines for Lands under Wilderness Review. The IMP states that numerous activities may continue so long as they do not impair the wilderness characteristics. Staking mining claims would not harm or impair wilderness characteristics; however, actively working a mining claim could be harmful and such activities would be prohibited.

The Wilderness Act allows for the staking of mining claims until midnight December 31, 1983, after which the Congress must act to determine the status

of all lands under wilderness review. The IMP is designed to protect those areas until Congress can act.

Under the IMP some temporary impairing activities may be allowed if their impacts can be eliminated and the land restored to its original condition by the time the Congress is scheduled to act. Placing a large powerline system through the middle of Muggins Mountains would destroy the wilderness characteristics and would not be a temporary activity. Therefore, it cannot be allowed.

Issue No. 11 - Validity of Corridor-Scale Studies and Corridor-Selection Process

A few comments questioned the validity of a study in which the centerline is not precisely identified and questioned the process of corridor selection.

Response No. 11 - Validity of Corridor- Scale Studies and Corridor-Selection Process

A systematic and logical process was followed to identify study corridors. Regional-scale studies were performed to avoid major potential environmental conflicts, obtain relative sensitivity of various environmental elements, and seek opportunities for the construction of a 500kV transmission line. Preliminary corridor selection to avoid or minimize conflicts with the most sensitive environmental features and areas involved a consensus by representatives of the BLM, CPUC, Wirth Associates, Inc., U.S. Fish and Wildlife Service, Arizona Game and Fish Department, Arizona State Land Department, APS and San Diego Gas & Electric Company. These tentative corridors were presented to the public during our scoping process. Some links were added and some corridors were moved. Later, on the basis of a minimal engineering and rights-of-way investigation, the Applicants identified a tentative centerline within each corridor.

The tentative centerline provided a basis for and established limits for an adequate environmental sampling. Because the impact assessment was conducted at the same level of detail throughout the corridors for one-quarter mile on either side of the tentative centerline, it is not necessary to know the precise location of the final centerline so long as it falls within the quarter-mile tolerance on either side of the tentative centerline. After a final route is selected and approved, site-specific studies (e.g., archaeological, historical, etc.) will be conducted to determine impacts and mitigation for precise tower and access-road locations.

Linear land-use features (roads, pipelines, railroads and other transmission lines) were considered relatively compatible with a 500kV transmission line.

These linear uses represent potential opportunities to use existing rights-of-way and potentially minimize the visual and physical impacts of major transmission lines. We believe the corridor concept is sound and basic to land management and land-use planning. Section 503 of the Federal Land Policy & Management Act states, "In order to minimize adverse environmental impacts and the proliferation of separate rights-of-way, the utilization of rights-of-way in common shall be required to the extent practical . . ."

Issue No. 12 - Avoiding Eucalyptus Hills

Local residents suggested consideration of an alternative route for a portion of Link 151, an existing right-of-way, to avoid Eucalyptus Hills. Their recommended route, Alternate Route 3, would turn north for approximately 1.7 miles at the eastern edge of Moreno Valley, then turn west until intersecting the existing transmission line at the head of Sycamore Canyon approximately 1.5 to 2.0 miles north of Mission Tap.

Response No. 12 - Avoiding Eucalyptus Hills

Although Alternate Route 3 is feasible, it is not recommended because of greater impacts that would result to the human and natural environments relative to the proposed route. And while Alternate Route 3 does not appear to have as many residences in close proximity as Link 151, an existing right-of-way, the line would clearly be more visible to virtually all residences (within one mile) in Moreno Valley and travelers along Highway 67.

The proposed route crosses the relatively undisturbed western slopes of the El Cajon Mountains which are of high (Class A) scenic-quality and high visual sensitivity. The visual impact of the transmission line would result not only from the introduction of a new structure (the towers), but also the physical contrast of an access road on the relatively undisturbed boulder-strewn hillside. Although the towers would only be skylined in a few locations, a new access road would be necessary and, consequently, 1.5 miles of the line would be visible by residences of Moreno Valley and 3.5 miles of the route would be visible from Highway 67. Alternate Route 3 would also cross, and be highly visible from, the access road leading to the San Vicente Reservoir recreation area. This would result in significant unavoidable adverse impacts to area residents, visitors of the San Vicente Reservoir and users of Highway 67.

The proposed route (Link 151) would only result in a moderate impact where it crosses Highway 67 with the visibility being limited at this crossing. In addition, the visibility of the existing alignment in the Eucalyptus Hills is generally very limited and variable due to the rolling topography and the presence of mature vegetation which tends to screen the towers. Finally, the

overall visual impact is substantially less because the proposed route follows an existing corridor that contains structures similar to the proposed action.

Significant impacts to social and economic land-uses could result along Alternate Route 3 because a 100-foot-wide right-of-way could remove approximately three to five single-family dwellings, depending on the final location of the alignment. To avoid these significant impacts, the alignment would have to be placed at least one-quarter mile to the east and north, which would result in a number of towers being skylined, thereby increasing the visual impact to area residents. Seven communication towers are located within one-quarter to one-half mile of the proposed alignment. Finally, a hazard to the line could occur from excavation and blasting activities where the line crosses an existing quarry. Consequently, the line would have to be routed further south in this area (potentially increasing the visual impact) to avoid the quarry.

In addition, considerably poorer accessibility and steeper, more rugged topography associated with Alternate Route 3 would result in substantially increased potential for soil erosion and scarring, and significant impact to the planned Sycamore Park. As vegetation along the northern route is generally more undisturbed than along the existing right-of-way, construction of the line along Alternate Route 3 would also increase impacts to natural ecological values.

In summary, building a second line in an existing transmission right-of-way is the preferred alternative to opening a new transmission-line corridor because:

1. Use of the existing right-of-way would have lower visual impacts as a result of existing transmission structures similar in size and configuration to those proposed for the 230kV line. Using the existing right-of-way would also create fewer physical impacts related to soil erosion and scarring, and to ecological resources due to the presence of access roads and other disturbances.
2. Alternate Route 3 would not provide any measurable environmental savings. This is because a lack of other existing rights-of-way in the area and the presence of natural scenic, ecological and recreational amenities; scattered residential development; and rugged topography and poor accessibility in the area north of the existing transmission right-of-way.
3. Additional costs for acquisition of a new right-of-way and facility construction would be incurred with no off-setting environmental benefits.
4. It provides an opportunity to minimize proliferation of transmission lines through joint corridor planning and the utilization of a right-of-way that was established years ago.

TABLE 2-IF
DRAFT ENVIRONMENTAL STATEMENT

Written Comments to BLM and CPUC

The following table lists letters in the order received. A total of 122 letters were received in response to the DES. BLM received 49 letters (indicated by "B" in letter number) and CPUC received 73 letters (indicated by "C" in letter number) 12 of which are duplicates of BLM letters. A number of broad issues or concerns were raised frequently by reviewers. Summaries of these issues and relevant responses or references to responses (listed in "Summaries of Major Issues/Concerns and Responses") are presented below. Letters requiring specific responses are reproduced and responded to in the subsequent section. Letters received after the public comment period of 15 October 1980 will be considered in the final decision even though they are not summarized or reproduced here.

Summaries of Letters and Responses

<u>Letter No.</u>	<u>From</u>	<u>Issue/Concern</u>	<u>Response</u>
B-1	USDA, Forest Service, Cleveland National Forest	"No serious effect on Forest lands from this project."	None
B-2	Department of the Army, Los Angeles District, Corps of Engineers	Proposed plan does not conflict with plans of the Corps of Engineers.	None
B-3	USDI, Bureau of Mines, Intermountain Field Operations Center	Specific comments.	Reproduced and responded to in Table 2-2F.
B-4	David F. Needham Anito Needham	Property value. Oppose line through Dome Valley.	Refer to Response No. 2. Your comments have been noted and will be considered in the final decision.
B-5	John T. Donno	Property value. Should use BLM land and avoid residences. Opposed to preferred route through Dome Valley.	Refer to Response No. 2. The BLM preferred route would avoid dislocation of residences. Refer also to Response No. 8. Your comments have been noted and will be considered in the final decision.
B-6	Arizona State Land Department, Division of Natural Resources	Specific comment.	Reproduced and responded to in Table 2-2F.
B-7	Arizona Agricultural Aviation Association	Agriculture - Aerial application, impact to prime farmland.	Refer to Response No. 4.
B-8	Yuma County Planning and Zoning Department	Agriculture - Aerial application, impact to prime farmland and irrigation districts. Visual Impacts in Gila Valley, East Yuma Mesa, Yuma Valley. Growth - Inhibit growth of Yuma. Impacts to two subdivisions and two oilstrips along environmentally preferred route. Suggests study of alternatives to north.	Refer to Response No. 4. In addition, APS would apply to the appropriate irrigation district for a permit to cross their facilities. The districts have specified a minimum clearance to be maintained over their facilities for distribution and subtransmission lines. APS would recommend that N.E.S.C. clearances be maintained and would work with the district for an appropriate wire height of 500kV lines. APS would not provide shielding but would fund grounding of maintenance equipment if required through APS/irrigation district agreement. In general, each crossing would be handled separately. We agree. See the SDES for identification and assessment of new alternatives that would reduce visual impacts in these areas. Refer to Response No. 3. Northern environmentally preferred route studied for SDES avoids impacts to residences, subdivisions and oilstrips. SDES and FES respond to issues.
B-9	Yuma Audubon Society	Specific comments.	Reproduced and responded to in Table 2-2F.
B-10	Maricopa County Department of Planning and Development	"...our recommendation that Alternative Set 1 Route 3, Links 2, 3 and 4 be selected as the preferred route for the 500 KV Electrical Transmission Lines located within Maricopa County."	Because the links are stated incorrectly, there is confusion about the preferred route. Alternative Set 1, Route 3 includes Links 2, 3, 5 and 6. Alternative Set 1, Route 2 includes Links 2, 3, 4 and 6.
B-11	USDA, Soil Conservation Service	Specific comments.	Reproduced and responded to in Table 2-2F.
B-12	Thone L. Eddington Constance L. Eddington	Property value - Aesthetic impact. Electrical effects - Health and safety, Audible noise. Adverse impacts on oil resources.	Refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1. Your comment has been noted and will be considered in the final decision.
B-13	Bob Stump U.S. Congress, 3rd District, Arizona	Opposed to the preferred route through the Yuma area. Recommends study of alternatives to the north using Federal land rather than prime agricultural or residential areas.	SDES and FES respond to issue. Refer to Responses Nos. 4, 8 and 10.
B-14	Kathleen E. Lindenmeyer Thomas A. Lindenmeyer	Electrical effects - Health and safety, Audible noise, TV/Radio reception interference. Impact to natural environment and aesthetics in Jacumba area. Property value - Compensation, Visual impact. Request relocation of power lines away from residences in Jacumba area. Alternative energy sources (solar and wind).	Refer to DES, Appendix E, and Response No. 1. We believe impacts adequately analyzed. Refer to Response No. 2. SDES responds to issue. Refer to SDES, Chapter 3 and Response No. 5.

Table 2-1F (continued)
Summaries of Letters and Responses

<u>Letter No.</u>	<u>From</u>	<u>Issue/Concern</u>	<u>Response</u>
B-15	Florence Shipek, Ph.D	Inadequate public notice and distribution of DES. "...bees cannot live within a mile or more of high power lines, depending upon the amount of power carried in the line." Property value - Compensation. Will SDG&E purchase devalued land? Alternative energy sources (solar and wind). Growth - Encourage unwanted growth, project will increase need for water. Electrical effects - Health. A list of references relating to the electrical effects of transmission lines was enclosed with letter.	We believe our notices strictly conformed to the requirements of CPUC and BLM. There is no evidence to support this allegation. Refer to Response No. 2. Refer to SDES, Chapter 3 and Response No. 5. Refer to Response No. 3. Refer to DES, Appendix E, and Response No. 1. The references cited support potential health and environmental effects associated with EHV transmission lines. But we do not believe that they alter the adequacy of Appendix E.
B-16	Mrs. James F. Peterson, Jr.	Electrical effects - Health and safety.	Refer to DES, Appendix E, and Response No. 1.
B-17	U.S. Department of Transportation, Federal Aviation Administration, Western Region	"The draft EIS did identify two airstrips in Arizona which will be traversed if the preferred route is the selected alternative for construction. The report did not give sufficient information on name, location, and operational characteristics of these airport sites for us to determine possible impacts. This information should be submitted as a part of any airspace obstruction evaluation as stipulated in FAR Part 77."	The two airstrips identified are private and not under FAA jurisdiction. No FAA interference zones are crossed by the BLM or environmentally preferred routes.
B-18	Joseph H. Brawn Luz Brawn	Opposed to preferred route. Suggests route along Mexico-California Border.	SDES responds to issue. See Chapter 2 and Appendix G.
B-19	U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control	Specific comments.	Reproduced and responded to in Table 2-2F.
B-20	Carolyn M. Spencer	Growth - Encourage unwanted growth. Property value - Visual impact. Electrical effects - Health, Audible noise. Suggests consideration of alternative energy sources.	Refer to Response No. 3. Refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1. Refer to SDES, Chapter 3 and Response No. 5.
B-21	USDI, Fish and Wildlife Service, Ecological Services	During construction "no grading or recontouring should be done unless absolutely necessary. If vegetation is left in place and just crushed, root damage will be avoided and resprouting will take place in a short time. This practice can be used on spur roads and at tower sites."	We agree. See SDES, Table S-1, Generically Committed Mitigation, Nos. 4 and 5.
B-22	Gregory M. Marshall	Property value. Aesthetic impacts. Electrical effects - TV/Radio reception interference, Impacts to wildlife and humans.	Refer to Response No. 2. We agree, there will be significant visual impacts in the Jacumba area. Refer to DES, Appendix E, and Response No. 1.
B-23	Mr. and Mrs. Carroll Childers	Same comments as those presented in Letter No. B-22.	See response to Letter No. B-22.
B-24	Dale E. Parker Martha B. Parker	Same comments as those presented in Letter No. B-22.	See response to Letter No. B-22.
B-25	Ollis B. Autry	Electrical effects - TV/Radio reception and Emergency communication interference, Health and safety. Visual and aesthetic impacts.	Refer to DES, Appendix E, and Response No. 1. See response to similar comment presented in Letter No. B-22.
B-26	Rebecca J. Reel	Electrical effects - Health, Audible noise, Olfactory impacts, Emergency communication interference. Visual impacts.	Refer to DES, Appendix E, and Response No. 1. See response to similar comment presented in Letter No. B-22.
B-27	Timothy Reel	Specific comment.	Reproduced and responded to in Table 2-2F.
B-28	Rita O. Anderson	Same comments as those presented in Letter No. B-22.	See response to Letter No. B-22.
B-29	Lara L. Cline	Electrical effects - Health. Impacts to cultural resource areas.	Refer to DES, Appendix E, and Response No. 1. Refer to DES, Table S-1, Generically Committed Mitigation, No. 11. Significant impacts to cultural resources are addressed in Chapter 5 of the DES and SDES.
B-30	Brett Hamlet	Electrical effects - Health and safety. Should delay project until proven safe. Property value. SDG&E should be required to purchase devalued land. An article relating to the electrical effects of transmission lines was enclosed with letter.	Refer to DES, Appendix E, and Response No. 1. Request for delay noted. Refer to Response No. 2. The article supports potential health and environmental effects associated with EHV transmission lines. But we do not believe that it alters the adequacy of Appendix E.

Table 2-1F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
B-31	Northern Arizona Audubon Society	Bird-collision hazard (Colorado River and Mittry Lake). Supports environmentally preferred route to south.	Refer to Response No. 6. No final routing alternative crosses Mittry Lake Wildlife Area. Your comment has been noted and will be considered in the final decision.
B-32	U.S. Environmental Protection Agency	Specific comments.	Reproduced and responded to in Table 2-2F.
B-33	USDI, Fish and Wildlife Service	Specific comments.	Reproduced and responded to in Table 2-2F.
B-34	Merle Homlet Potricio Homlet	Specific comments.	Reproduced and responded to in Table 2-2F.
B-35	Arizona Game and Fish Department	Specific comments.	Reproduced and responded to in Table 2-2F.
B-36	Imperial County Farm Bureau	Alternate route should be studied to avoid agricultural areas. Preferred route inconsistent with County General Plan. Agricultural - Aerial application, Impacts to prime farmland.	Alternative routes avoiding Imperial Valley were evaluated but found to have greater impacts to other resources and significantly greater costs. We recognize the inconsistency, but believe the preferred route has the least cumulative impacts. Refer to Response No. 4.
B-37	Yuma APS/SDG&E Project Relocation Committee	Suggests additional study and reroute of transmission line and switchyard north of Yuma to avoid agricultural and residential areas.	SDES and FES respond to issues.
Enclosures with letter include committee statement (presented by Tommy Lang at hearing in Phoenix, October 1, 1980) and copies of letters received by committee.			
Letters attached in support of relocation committee effort:			
	Bruce Bobbitt Barry Goldwater Dennis DeConcini Bob Stump Morris Courtwright Eugene Hinds Robert K. Corbin W. J. Fish, Jr. Larry Landry William T. Keane	Governor of Arizona United States Senator United States Senator United States Representative Arizona State Representative USDI, Water and Power Resources Service, Lower Colorado Regional Office Attorney General Arizona State Land Department Arizona Office of Economic Planning and Development Arizona Agricultural Aviation Association	These comments have been noted and will be considered in the final decision.
Letters attached presenting impact issues:			
	USDI, Fish and Wildlife Service	Preferred route results in least amount of ecological impact. If a northern route is selected, a river crossing south of Laguna Dam is preferable. Objects to crossing Mittry Lake Wildlife Area.	Your comments have been noted and will be considered in the final decision. No final routing alternative crosses Mittry Lake Wildlife Area.
	Arizona Game and Fish Department	Preferred route results in least amount of ecological impact. If a northern route is selected, a river crossing south of Laguna Dam is preferable. Objects to crossing Mittry Lake Wildlife Area.	Your comments have been noted and will be considered in the final decision. No final routing alternative crosses Mittry Lake Wildlife Area.
	Yuma Womens Reel and Rifle Club	Agriculture - Impact to prime farmland. Northern route would not be detrimental to fish and wildlife. Growth - Inhibit growth of Yuma. Electrical effects - TV/Radio reception interference.	Refer to Response No. 4. SDES and FES respond to issue. Refer to Response No. 3. Refer to DES, Appendix E, and Response No. 1.
	Yuma Valley Rod and Gun Club, Inc.	In favor of northern route because in best interest of Yuma and farming in Yuma area. No effect on wildlife or migratory birds in that area.	SDES and FES respond to issue. Refer also to Response No. 4. Refer to Response No. 6.
B-38	USDA, Soil Conservation Service	Specific comments.	Reproduced and responded to in Table 2-2F.
B-39	The Maricopa Audubon Society	Inadequate consideration of alternative energy sources (solar) and/or conservation in Yuma area. Objects to crossing Mittry Lake Wildlife Area. Supports environmentally preferred route to south.	Refer to SDES, Chapter 3 (page 3-17s), and Response No. 5. No final routing alternative crosses Mittry Lake Wildlife Area. Your comment has been noted and will be considered in the final decision.
B-40	Joe and Evelyn Breech	Opposed to preferred route across farm and residence in Yuma Valley.	SDES and FES respond to your concerns.
B-41	Lindo Buccellato and Family	Electrical effects - Health. Opposed to routing through Eucalyptus Hills.	Refer to DES, Appendix E, and Response No. 1. Refer to SDES, Appendix G, and Response No. 12.
B-42	USDI, Water and Power Resources Service, Lower Colorado Regional Office	"Further, there appears to be a minimum of information regarding impacts upon farmland in the Yuma Valley or the Yuma Mesa if the line is constructed as proposed as compared to the impact of line construction on undeveloped land north of the formed area."	Appendix D of the DES addresses impacts to prime farmland and SDES documents studies of areas north of Yuma.

Table 2-1F (continued)
Summaries of Letters and Responses

<u>Letter No.</u>	<u>Fram</u>	<u>Issue/Concern</u>	<u>Response</u>
B-43	Ruth S. Jenkins	Electrical effects - Health. Property value.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2.
B-44	Serena Road Committee	Specific comments.	Reproduced and responded to in Table 2-2F.
B-45	Arizona State Clearinghouse		
a	Arizona Department of Transportation Aeronautics Division	Specific comments.	Reproduced and responded to in Table 2-2F.
b	Arizona Department of Public Safety	Supports proposed Project.	None
c	Arizona State Museum	Supports proposed Project.	None
d	Arizona Department of Health Services	Will provide comments through participation on the State Power Plant and Transmission Line Siting Committee.	None
e	Arizona Department of Economic Security, Division of Planning and Policy Development	No comment.	None
f	Arizona Natural Heritage Program	No comment.	None
g	Arizona State Water Commission	No comment.	None
h	University of Arizona, College of Agriculture, School of Renewable Natural Resources	Supports proposed Project.	None
i	Radiation Regulatory Agency	Supports proposed Project.	None
j	Mineral Resources Department	No comment.	None
k	Agriculture and Horticulture	No comment.	None
l	Arizona State Land Department	Supports proposed Project.	None
m	Indian Affairs Commission	No comment.	None
n	Arizona State University Center for Public Affairs	"The interpretation of no action for the TRANSMISSION LINE as being no action for GENERATION is, of course, unacceptable. The consideration of alternatives is unacceptably incomplete. This generation-transmission activity is based on the assertion that others are obligated to provide all services & goods to anyone at any site of his/her choosing. Specifically, the transmission line is not needed: the generation is not economically feasible except when at the site of consumption."	The no-action alternative as we define it applied to transmission as well as generation and also included mitigating measures by the utilities. See page 3-1s of the SDES. We feel that the analysis of alternatives was accurate, adequate and complete. Chapter 1 of the SDES clearly states the need for the proposed action. Your other comments are outside the scope of the environmental statement.
a	Arizona State Mine Inspector	Supports proposed Project.	None
p	Arizona Corporation Commission	Supports proposed Project. "Greater attention should be given to socio-economic impact on affected residents."	The utilities do not have relocation programs. Affected property would be purchased at fair market value.
q	Office of Economic Planning and Development	No comment.	None
r	Maricopa Association of Governments	No comment.	None
s	District IV Council of Governments	No comment.	None
B-46	Robert O. Maupin	Specific comments.	Reproduced and responded to in Table 2-2F.
B-47	Wellton-Mahawk Irrigation and Drainage District	Specific comments.	Reproduced and responded to in Table 2-2F.
B-48	Patricia L. Inis, et al. (Petition, 18 signatures)	Electrical effects - Health and safety. Oppose proposed Project due to environmental, health, safety and economic problems.	Refer to DES, Appendix E, and Response No. 1. Your comments have been noted and will be considered in the final decision.
B-49	Robert B. Wilson, Jr.	Agriculture - Impact to prime farmland, agricultural crops and practices and compensation for crop losses. Opposed to Keystone Route because of longer length and unstable soils. Unlikely Imperial Irrigation District would share right-of-way.	Refer to Response No. 4. Your comments have been noted and will be considered in the final decision. Imperial Irrigation District was involved in selection of routes studied for SDES.
C-1	USDA, Forest Service	Specific comment.	Reproduced and responded to in Table 2-2F.
C-2	International Boundary and Water Commission, U.S. and Mexico	Specific comment.	Reproduced and responded to in Table 2-2F.
C-3	U.S. Department of the Navy, Western Division, Naval Facilities Engineering Command	Specific comments.	Reproduced and responded to in Table 2-2F.

Table 2-1F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
C-4	California State Office of Planning and Research (Clearinghouse)		
a	U.S. Department of Health and Human Services, Public Health Services, Center for Disease Control	Same letter as B-19.	See response to Letter No. B-19.
b	California Energy Commission	Specific comments.	Reproduced and responded to in Table 2-2F.
c	California Department of Parks and Recreation	No State Park System unit would be directly affected by the proposed Project.	None
d	California Department of Fish and Game	Specific comments.	Reproduced and responded to in Table 2-2F.
C-5	California Department of Transportation, Division of Aeronautics	Specific comments.	Reproduced and responded to in Table 2-2F.
C-6	California Regional Water Quality Control Board, Colorado River Basin, Region 7	No comment.	None
C-7	Comprehensive Planning Organization (San Diego Region's County of Governments)	Supports proposal to supply energy to San Diego. Enclosure of resolution of Board of Directors supporting Project.	None
C-8	San Diego County, Department of Planning and Land Use	Specific comment.	Reproduced and responded to in Table 2-2F.
C-9	San Diego County, Department of Planning and Land Use	Approves concept of and need for proposed Project. Requests alternative routing to south of Dulzura area.	None SDES responds to issue. See Chapter 2 and Appendix G.
C-10	Metropolitan Water District of Southern California	No impact to water district facilities. Supports proposal concept.	None
C-11	Planning Director City of Calexico	Specific comments.	Reproduced and responded to in Table 2-2F.
C-12	San Diego Gas & Electric Company	Specific comments.	Reproduced and responded to in Table 2-2F.
C-13	Imperial County Farm Bureau	Same letter as B-36.	See response to Letter B-36.
C-14	San Diego Voice of Energy	Supports Project because proposed source of energy reduces reliance on oil.	None
C-15	Mar Aviation	Agriculture - Impact to prime farmland, Aerial application hazard. "If the line must cross farm lands we ask the following conditions be met for our safety. 1. Lines run straight as much as possible, few turns and no angles across farmed areas. 2. Not placed over other hazards such as Power lines, Phone lines, Trees, Homes, Radio towers, Feedlots or areas normally used for storage of Hay or Equipment. Keep or require the areas below the lines to be kept clear as possible. 3. Lights on every other tower and on any change of direction the line must take. 4. Lines not to cross any field center. Please keep them on regular field ends so they may be flown under and do not present themselves in the critical portion of a turnaround."	Refer to Response No. 4.
C-16	Frontier Agricultural Service	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-17	Staker Company (Aerial applicators)	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-18	Central Grove Aerial Application	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-19	D. S. Dusters	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-20	Paine Aera Service	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-21	Visco Flying Company	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-22	Lorry Rose	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-23	Jim D. Newman	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-24	Jack Sadler	Agriculture - Aerial-application hazards.	Refer to Response No. 4.
C-25	Francis J. McGroth	Agriculture - Aerial-application hazards and loss of cropland. Suggests alignment be routed to north.	Refer to Response No. 4. SDES and FES evaluate northern alternative.
C-26	Val-Air Company, Inc.	Agriculture - Loss of prime farmland.	Refer to Response No. 4.

Table 2-1F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
C-27	A. L. Reed	Electrical effects - Health and safety. Suggests consideration of alternative energy sources (solar).	Refer to DES, Appendix E, and Response No. 1. Refer to SDES, Chapter 3 (page 3-12s), and Response No. 5.
C-28	Jack F. and Edythe Peterson	Protests 350 foot right-of-way and 2 million volt transmission line that will impact Peterson property. Electrical effects - Health and safety. "The draft environmental document refers to Tecote Peak as being sacred, the towers would be located south of the peak." "If the court decides on route 145 through Dulzura instead of route 146 the border route..." Requests that affected property owners receive fair market value plus 25% for relocation or "have option to lease their property, fair market value with inflation and deflation clause to be adjusted each year..."	As identified in the DES and SDES, the right-of-way is 200-feet wide rather than 350 feet and the proposed transmission line would be one half million volts. Also, refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1. Due to constraints imposed by International Boundary and Water Commission, U.S. and Mexico, the preferred route is located north of Tecote Peak. A new route was identified in the SDES. Refer to Response No. 2.
C-29	Donald E. Scheckler	Electrical effects - Health and safety. Property value.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2.
C-30	Barbara L. Thompson Terry A. Thompson	Electrical effects - Health and safety. Property value.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2.
C-31	Unsigned	Plan is not based on need, but rather SDG&E's desire for higher profits. Suggests consideration of alternative energy sources and/or conservation. Electrical effects - Health and safety. Inadequate notice of public hearing.	Refer to SDES, Chapter 1. Refer to SDES, Chapter 3, and Response No. 5. Refer to DES, Appendix E, and Response No. 1. Refer to response to similar comment presented in Letter No. B-15.
C-32	Glenn and Barbara Poxton	Suggest placing line underground when within one mile of residences, especially in Tecote and any potentially populous areas.	Refer to SDES, Chapter 3 (page 3-20s). Refer also to Response No. 7. In addition, we have found no justification for a buffer zone beyond the 200-foot wide right-of-way (determined necessary for the 500kV line) as a measure to mitigate impacts of the proposed Project.
C-33	Esther R. Schmitt	Electrical effects - Health and safety.	Refer to DES, Appendix E, and Response No. 1.
C-34	Concerned for the Quality of Life	Electrical effects - Health and safety.	Refer to DES, Appendix E, and Response No. 1.
C-35	Arnold Hunsberger	Request for complete cost analysis, for first and second (i.e., second transmission line) phases of proposed Project.	A second 500kV line, or second phase, is not being planned. The construction schedule and cost estimate for the proposed transmission system are found in Tables 3-6(R) and 3-7(R), respectively, of the SDES. The cost estimate is given in escalated dollars through completion of construction for various types of facilities associated with the proposed Project and, as such, includes anticipated cost-of-living increases, engineering costs, and administrative and general costs. Inasmuch as the technology and construction techniques required for the proposed Project are well-developed, schedule slippage and attendant cost overrun are not expected to occur. Costs associated with the proposed Project including overrun, if any, will be reviewed by the CPUC before being allowed into SDG&E's rate base.
C-36	William L. Bretz, Ph.D.	Questions future energy need and forecasting methodology. Suggests decentralized energy alternatives that would provide greater local self-reliance for meeting energy needs. Electrical effects - Health and safety. Requests twelve-month extension for preparation of testimony.	Refer to SDES, Chapter 1. Methodology is approved and adopted by California Energy Commission. We believe that local self-reliance may be a desirable long-term goal, but there is a more immediate goal of displacing oil for electricity generation, consistent with the national energy policy. (Refer to SDES, Chapter 1.) We also believe the proposed Project is consistent with California's energy resource priorities established by the California Energy Commission. Alternative energy sources were evaluated in Chapter 3 of the SDES and shown to be inadequate for meeting SDG&E's immediate needs. Refer to DES, Appendix E, and Response No. 1. Request for delay noted.

Table 2-1F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
C-37	Cliff Hurley	Environmental Consequences Chart (Table 3-9) of document does not adequately display environmental setting, environmental consequences or the impacts to Colexico and Heber. Internal review process and methodology for review should be explained.	We believe the environmental document clearly displays the environmental setting and identifies the environmental consequences. No significant impacts to Colexico or Heber are anticipated except visual impacts to the Town of Heber. The internal review process and methodology for review are not required under NEPA or CEQA nor do we consider them necessary or useful in this combined environmental document.
C-38	Betty-jean and Bruce A. McCutcheon	Electrical effects - Health and safety. General environmental and economic problems. Insufficient notice of public hearing. Project unnecessary when other alternatives are available.	Refer to DES, Appendix E, and Response No. 1. Your comments have been noted and will be considered in the final decision. See response to similar comment presented in Letter No. B-15. Refer to SDES, Chapters 1 and 3, and Response No. 5.
C-39	Esther R. Schmitt	Electrical effects - TV/Radio reception interference, Audible noise. Objects to emphasis of ecological and cultural values over human values. Insufficient notice to potentially affected landowners. No copies of DES at El Cajon, Lakeside or Santee libraries prior to October 7th hearing. Property value - Visual Impact. Suggests routing on public land and more than one mile from residences. SDG&E representative spoke of two lines in right-of-way when there are six lines.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 9. See response to similar comment presented in Letter No. B-15. Notification to landowners potentially affected was in compliance with CEQA. Refer to Response No. 2. Refer to Response No. 8. We have found no justification for a buffer zone beyond the 150-foot wide right-of-way (determined necessary for the Miguel to Mission Tap line) as a measure to mitigate impacts of the proposed Project. The "two line" referred to by the SDG&E representative are a double-circuit 138kV transmission line. Since each "line" has three phases, what you see are six conductors.
C-40	J. Norman Bulpit	Property value - Aesthetic Impacts. Electrical effects - TV/Radio reception interference. Questions difference in potential cost between routing over "open government desert versus heavily settled agricultural land." Should use government land. Concerned for natural versus human tradeoffs.	Refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1. Right-of-way acquisition cost is about 15 times greater across agricultural land than open government desert. However, distance is the primary determinant of total system cost for the transmission system. Right-of-way acquisition costs are about 10 percent of total estimated project capital costs. Refer to Response No. 8. Refer to Response No. 9.
C-41	Dr. Clyde L. Imhoff, Jr.	Endorses issues presented in Letter No. C-40. Recommends study of new route south of Pilot Knob paralleling All American Canal.	See response to Letter No. C-40. SDES responds to issue.
C-42	Carolyn Spencer	Same letter as B-20.	See response to Letter No. B-20.
C-43	E. O. Priddy	Specific comments.	Reproduced and responded to in Table 2-2F.
C-44	Thane and Constance Eddington	Same letter as B-12.	See response to Letter No. B-12.
C-45	Thomas and Kathleen Lindenmeyer	Same letter as B-14.	See response to Letter No. B-14.
C-46	Florence Shippek	Same letter as B-15.	See response to Letter No. B-15.
C-47	Sam Dowson	Specific comments.	Reproduced and responded to in Table 2-2F.
C-48	Merle and Patricio Homlet	Same letter as B-34.	See response to Letter No. B-34.
C-49	United Enterprises, Inc.	Specific comments.	Reproduced and responded to in Table 2-2F.
C-50	Ben Wyly, Chairman Jocumba Volunteer Fire Department	Electrical effects - Emergency communication interference.	Refer to DES, Appendix E, and Response No. 1.
C-51	William L. Bretz, Ph.D.	Specific comments.	Reproduced and responded to in Table 2-2F.
C-52	Cliff Hurley	Same comments presented in Letter No. C-37. Document inadequate as decision-making tool.	See response to Letter No. C-37. We believe the combined environmental document is a soundly based explication of the environmental factors. The environmental effects of the proposed action are outlined and detailed to allow the public and decision-makers to understand and consider the factors involved.
C-53	Cliff Hurley	Requests that "a transformer station be identified and evaluated in the Mesquite Lake area." Questions "the need for the 15 to 23 miles of 161kV line needed for the transformer station proposed for the preferred route."	Mesquite Lake Substation site was studied. See SDES, Appendix G, page G-8. New 161kV corridor locations were provided by the Imperial Irrigation District (IID) and are analyzed in the SDES. SDG&E and IID are currently negotiating either the possibility of providing 100 megawatts of transmission service to IID or selling up to 22.4 percent ownership interest between Arizona and the Imperial Valley.

Table 2-1F (continued)
Summaries of Letters and Responses

<u>Letter No.</u>	<u>From</u>	<u>Issue/Concern</u>	<u>Response</u>
C-53 (cont)	Cliff Hurley	Environmental consequences of Mexico tie should be part of proposed action.	We recognize the potential relationship between the Mexico purchase and this proposal (see SDES page 3-15s). Although an agreement was reached between SDG&E and Mexico (CFE) on the power purchase, at this time there has been no agreement on the point of delivery to the United States. Therefore, the Mexico tie is not ripe for consideration in this Project. Refer to responses above.
		Document should show cumulative effects of alternative including Mesquite Lake and Mexico tie "as opposed to the cumulative effect of the preferred route design."	
C-54	Frank Murphy	Property value - Site of proposed dwelling within right-of-way. Recommends alternative alignment. Impacts to people most important to consider. Questions need for 350-foot right-of-way.	Refer to Response No. 2. Your comments have been noted and will be considered in the final decision. Refer to Response No. 9. Right-of-way was changed to 200 feet (see SDES). SDG&E has dropped plans for a second transmission line.
		Enclosures with letter included easement and correspondence with SDG&E.	
C-55	Rita O. Anderson	Same letter as B-28.	See response to Letter No. B-28.
C-56	Linda Buccellato and Family	Same letter as B-41.	See response to Letter No. B-41.
C-57	C. L. Konz	APS/SDG&E "planned to spend \$300,000,000 on this project to service 1,000 customers."	The proposed Project would service 873,000 SDG&E customers and 35,000 APS customers. If IID acquires an interest in the proposed Project, additional customers will receive service. Refer to DES, Appendix E, and Response No. 1.
		Electrical effects - Health and safety, damage to vegetation.	
		Will Project result in rate increase?	No. Refer to DES, Chapter 5, page 5-18.
C-58	Farm-Air Service, Inc.	Agriculture - Aerial-application hazard.	Refer to Response No. 4.
C-59	Joseph and Luz Brown	Same letter as B-18.	See response to Letter No. B-18.
C-60	Howard A. Burk Western Realty Company	Electrical effects - Health and safety.	Refer to DES, Appendix E, and Response No. 1.
C-61	Joseph and Luz Brown	Same letter as B-18.	See response to Letter No. B-18.
C-62	Eucalyptus Hills Lowners Association	Opposed to preferred route through Eucalyptus Hills and requests routing line preferably one mile away from residences. Electrical effects - Health, Audible noise, TV/Radio reception interference. Claims DES ignores New York State Public Service Commission testimony. Property value - Aesthetic impacts.	Refer to SDES, Appendix G (pages G-9s to G-11s) and Response No. 12. In addition, see response to similar comment regarding one-mile distance presented in Letter C-39. Refer to DES, Appendix E, and Response No. 1. See references to Appendix E in the DES. Refer to Response No. 2.
C-63	Sereno Road Committee	Same letter as B-44.	See response to Letter No. B-44.
C-64	Cathy L. Hewitt	Electrical effects - Health. Property value. Opposed to preferred route through residential areas. Suggests routing line one mile from residences.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Refer to SDES, Appendix G (pages G-9s to G-11s) and Response No. 12. In addition, see response to similar comment (regarding one-mile distance) presented in Letter No. C-39.
C-65	Cliff Hurley	Mexico tie should be part of Project.	Refer to response to similar comment of Letter No. C-53.
C-66	Ruth S. Jenkins	Same letter as B-43.	See response to Letter No. B-43.
C-67	Lucia Fisher	Specific comments.	Reproduced and responded to in Table 2-2F.
C-68	Robert O. Maupin	Same letter as B-46.	See response to Letter No. B-46.
C-69	San Diego Archaeological Society, Inc.	Specific comments.	Reproduced and responded to in Table 2-2F.
C-70	Frank H. Murphy	Proposed transmission line would impact proposed Murphy homesite. Recommends alternative alignment.	Our environmental documents are corridor studies; ultimate location of transmission line is negotiable with SDG&E. SDG&E has discussed this with Mr. Murphy. Refer also to Response No. 11.
C-71	Joe Maggio, Inc.	Specific comments.	Reproduced and responded to in Table 2-2F.
C-72	Lou Bernath	Supports proposed Project.	None
C-73	Ray R. Young	Growth - Inhibit growth of Yuma (obstacle to orderly expansion). Electrical effects - Health and safety. Suggests route north of Yuma.	Refer to Response No. 3. Refer to DES, Appendix E, and Response No. 1. SDES responds to issue.

TABLE 2-2F
DRAFT ENVIRONMENTAL STATEMENT
Written Comments to BLM and CPUC
Complete Letters and Responses

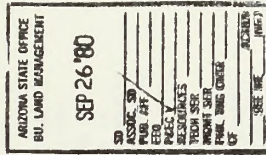


United States Department of the Interior

BUREAU OF MINES

P. O. BOX 25086
BUILDING 20, DENVER FEDERAL CENTER
DENVER, COLORADO 80225

Intermountain Field Operations Center



September 23, 1980

Stan Wagner, State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona 85073

Dear Mr. Wagner:

U.S. Bureau of Mines records indicate that several mineral commodities occur in southern Arizona and southern California in the general vicinity of the proposed transmission lines for the APS/SDGE Interconnection Project. Some of these records note mere occurrences or prospects, but some indicate that minerals have been produced in the past or may be mined now. No section of the DEIS was devoted to a discussion or acknowledgment of the existence of these mineral resources, except for the following statement, which was tucked obscurely under the section "Social and Economic Land Uses - California" (p. 4-29).

Numerous mining sites and mineral locations occur within the California study corridors, the vast majority of which are abandoned or inactive. Major concentrations of mining and mineral resources within the study corridors include the eastern edge of the Imperial Valley, the Plaster City/Coyote Mountains area and the Jacumba region of extreme southeastern San Diego County.

We found no similar offhand statement about Arizona's mineral resources under a parallel heading on page 4-24 or in either the Contents or the Index.

We believe that the subject of mineral resources in the immediate vicinity of the corridors should include a clear and precise discussion of any current mining activities and their possible disruption by the new transmission lines. Known mineral occurrences include copper, gold (lode and placer), bentonite, sand and gravel, perlite, several kinds of building stone, molybdenum, fluorite, niobium (columbium) and tantalum, rare earths, tungsten, uranium, vanadium, and barite. Bureau of Mines records indicate that for many of these mineral resources the sections, townships, and ranges are known and are included in the computer data base of our Minerals Availability Section, Mineral Industry Location System.

A [The issue of impacts to mineral resources was not raised during our scoping process and was therefore eliminated from detailed study. One of the objectives of scoping was to define the significant issues and concerns to be examined in detail while identifying and eliminating from detailed study those issues which are of no concern. We consider impacts to mineral resources for this proposal of no concern.

B-3 (continued)

Our general comments follow.

This document was exceedingly difficult to review. The notes below are offered in the hope that consideration and implementation of at least some of them will substantially improve the final EIS.

- B** [The title should be revised and improved so as to eliminate abbreviations and to add keywords. No cataloguer or librarian or indexer can be expected to understand, for cataloguing purposes, the subject matter of this volume, which is now titled: APS/SDGE Interconnection Project. Only a true insider can possibly guess at what meaning is intended. An improved title might be: Proposals for the Construction of New Interconnecting Electrical Transmission Lines in Southern Arizona and Southern California, as proposed by the Arizona Public Service and San Diego Gas & Electric Companies -- longer but much more informative.]
- C** [The Contents and Index both can be improved by anticipating the kind and depth of detail that will be needed by a research user. For example, "mineral resources" are keywords to a subject that is of primary interest to many persons; yet, this key phrase is not to be found in either the Contents or the Index.]
- D** [The Contents and Index should be moved to its customary position: Contents is, in professionally collated documents, placed at the front of a volume, following the title page and preceding the first page of text; the Index is placed at the end of the volume, following the last page of text (or appendixes, if they are truly necessary) and preceding the back cover. These two adjustments alone will aid the reader immeasurably.]
- The Summary, by definition, belongs at the end, but before the Index.
An Abstract appears before the main body of a text; however, even the Abstract, which should be included in the Contents, does not ordinarily appear ahead of the Contents.]
- E** [Page numbering is multifaceted and frustrating and should be simplified in the final document. At present, there are about two dozen pages bearing the number 1. Some pages, particularly those that contain tables, are not numbered at all, and some pages are numbered at the sides (along the broad measure) instead of at the bottom (along the narrow measure). Adjustment and simplification of the paging also will aid the librarian or cataloguer: no document should have more than one page 1, and all pages that follow it should be accounted for by consecutive, nonduplicated numbering.]
- F** [The illustrations should be individually and consecutively numbered. For example, the notation "figure 4-4" is used to identify four distinctly different geographic areas that appear on succeeding foldout pages. Each figure 4-4 is completely enclosed by neatlines of equal linewidth on all four sides, and not one figure 4-4 includes a guide to the reader showing how each of the four relates to the other three. Careful comparison leads one to suspect that the

- B** [We believe the title adequately describes the proposed Project. Moreover, according to Menzel, Jones, and Boyd in Writing a Technical Paper, a title should be brief, "As a rule it should not occupy more than one printed line. The title indicates the subject of the paper but should not attempt to summarize the content."]
- C** [As the topic of mineral resources was considered a nonissue, it was not listed separately.]
- D** [The format follows the recommended format of the Council on Environmental Quality contained in the Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act 40 CFR Part 1502.10.]
- E** [We disagree with your comments on page numbering. We believe it is clear to most readers that all of the pages bearing the number 1 are prefaced by a chapter number, 1-1, 2-1, 3-1, etc. Following this style allows additions and deletions to be made within each chapter without renumbering the entire document. Please refer to the Table of Contents for clarification.]
- F** [We agree that the notation for Figure 4-4 should have indicated a page 1 of 4, 2 of 4, etc.]

B-3 (continued)

four figures 4-4 are, indeed, related and have been placed in the bound volume in such a way that the first one may geographically match the second at the wrong end, and so on throughout the four figures.

G [Each illustration should bear a meaningful title or caption and should contain an Explanation. Titles or captions should be prominently placed and written in letters that are larger than the letters now used for the repetitions and unnecessary publicity blurb: APS/SDC&E INTERCONNECTION PROJECT, PHASE II ENVIRONMENTAL STUDIES.

H [Surprisingly, for a mere draft, the illustrations are reproduced in very expensive separate colors on very good quality papers and bound into the volume in a very expensive way (foldouts). For this critical first review by nonparticipants (like the Bureau of Mines), a more economically minded printer might have chosen to use cheaper paper and screened colors, using one hue for several greens, instead of several greens. The illustrations, when uniquely numbered, can be stuffed into an envelope for review purposes.

I [The thickness of the volume makes it impossible to use or to read without the aid of at least two nonskid paperweights or a second person to hold open the book. A partial solution to this problem of clumsiness is to remove Appendixes A through F to a second volume.

Sometimes a reviewer may wish to physically separate the pages of text, tables, and figures so that they may be more efficiently compared with each other for the sake of internal consistency; however, the disorganized page numbering was a clear warning to not attempt such a foolish maneuver.

J [We estimate that the 484 copies sent out for review probably represent about 50 percent of the number actually printed, and that the total price for the printing of 1,000 copies of this draft was about \$30,000 -- too large an amount of money for a conscientious reviewer to overlook when both the arrangement of materials and the completeness of information are questionable.

Sincerely yours,

Jim Jinks
James E. Jinks, Acting Chief
Intermountain Field Operations Center

cc: Bill Y. Lee, Project Manager
California Public Utilities Commission
350 McAllister Street
San Francisco, California 94102

G [We believe the illustrations are adequately identified.

H [Color was used to effectively present and display material. Clarity was the primary criterion for deciding on the use of color.

I [We believe the advantages of one thick volume outweigh the benefits of a second volume.

J [We believe the information is logically arranged and complete. Please read the following letter from the Council on Environmental Quality.

B-3 response attachment

EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, N. W.
WASHINGTON, D. C. 20006

October 20, 1980

Mr. Frank Gregg, Director
Bureau of Land Management
Washington, D.C. 20250

Dear Frank:

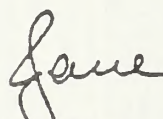
Recently a copy of the Arizona Public Service (APS) and San Diego Gas & Electric (SDG&E) Interconnection Project Draft Environmental Document was sent to the Council. Although we have not attempted to evaluate the substantive merits of the proposed action or alternatives, we would like to offer some comments on the document with respect to the procedural requirements of the CEQ Regulations.

The document is perhaps larger than necessary; however, its strengths outweigh this shortcoming. The document is well written in plain language and is analytic; the maps are easy to understand and well done. The recommended CEQ format is followed and each section contains the type of information that the Regulations require.

We are particularly pleased that this single document is designed to meet both state and federal NEPA requirements, thus eliminating duplication and excessive paperwork. If this approach proves successful, BLM should consider adapting it to a wider range of BLM planning and decisionmaking efforts.

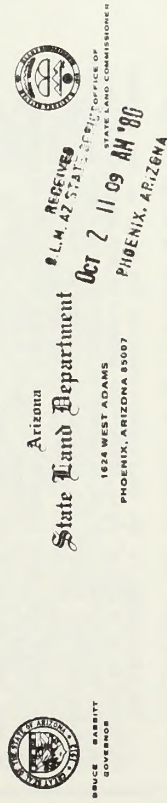
Please pass our comments on to those involved in this effort. We hope the quality of the final decision will be enhanced by the organization of this document.

Sincerely



Jane Yarn
Council Member

B-6



September 30, 1980

Mr. Clair M. Whitlock,
Arizona State Director
Bureau of Land Management
2400 Valley Center
Phoenix, Arizona 85073

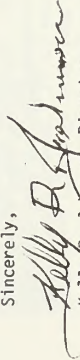
Dear Mr. Whitlock:

The staff of the Arizona State Land Department has reviewed the APS/SDG&E Interconnection Project, Draft Environmental Document (EIS/EIR), and offer the following comments for your consideration.

1. The document appears to be complete and comprehensive.
2. The proposed action alternative is reasonable, and with the exception of the Yuma area is preferred by the Arizona State Land Department.
3. We understand that the alternatives to the proposed route in the Yuma area are being considered and reserve comment on that portion of the route.
4. It is assumed that where the proposed route crosses State Trust land, all requirements of this Department will be met and that mitigation on these Trust lands will be consistent with that performed on other lands along the route.

Thank you for the opportunity to comment.

Sincerely,


Kelly R. Johnson, Director
Division of Natural Resources

KRJ:rey/nhk

A [If a right-of-way is approved by the Bureau of Land Management, the permit will require mitigation only on public land. Mitigation on land under other jurisdictions would be negotiated between the agency or landowner and the Applicant.]

B-9

RECEIVED
BLM. AZ STATE OFFICE

OCT 8 1980

YUMA AUDUBON SOCIETY
Yuma, Arizona 85364

7:45 A.M.

October 6, 1980
PHOENIX, ARIZONA

State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona 85073

Dear Sir:

On behalf of the Yuma Audubon Society, we wish to comment on the Draft Environmental Document on the AFS/SDG&E Interconnection Project. Based on the information presented in the document, we feel that the project should not be built in its proposed form but rather that some of the alternatives mentioned in the document should be employed. Our main concern is the AFS claim that a 500 kV power line to Yuma is the best way to provide for increased demand for electricity in the Yuma area. This has not been convincingly demonstrated in the Draft Environmental Document.

A There is an inherent conflict of interest when the source of information and authority that determines how much of a need there is for an electric power project is the utility itself, for the utility stands to benefit economically from the construction of the project. We do not deny that demand for electricity in Yuma will increase over the next ten years, but we doubt that it need increase as much as AFS claims and feel that increased demand could be met by other alternatives. AFS has rejected these alternatives on various grounds, but only because they appear to have chosen to ride piggyback on a line which is actually (i.e., 89%) being built to supply electricity to San Diego, but, apart from the AFS desire to supply electricity to Yuma, the line need not be built through Yuma. As we understand it (from a meeting with AFS, SDG&E, and Wirth Associates representatives on August 22, 1980), as far as SDG&E is concerned, they would just as well follow the Palo Verde-Devers 500 kV line corridor across Arizona. It is important to note that we are not trying to unload the line on some other area by opposing its construction through Yuma, but rather encouraging its construction where only one new powerline corridor would have to be built halfway across Arizona.

C The statements in the Draft Environmental Document on the claimed superiority of a 500 kV Palo Verde-Yuma powerline are contradictory. On page 3-6, construction of alternative generating sources in the Yuma area is rejected because "no additional generating capability could be justified by the company's long-range forecast until after 1990." Yet, on page 1-3 of the same document, it is stated that "The transmission capacity offered by the proposed Project, would, in short, allow APS to meet load growth in the Yuma area, at least through the next decade (emphasis ours)." Thus, the proposed project appears to be insufficient to "meet the forecast need for power by providing long-term firm transmission capacity" (Draft Environmental Document, p. 1-3) because just how much of the demand the powerline could meet is left hazy,

A We have reviewed the projections of APS's forecasted need for energy in the Yuma area and have found them to be reasonable. The Yuma area has shown consistent growth in the last three decades and projections for the future indicate the trend will continue. Population projections of the Arizona Department of Economic Security are in line with APS's load forecast. In addition, refer to SDES, Chapter 3, and Response No. 5.

B This is not true.

C The statements made on the pages quoted are not contradictions; they have been misinterpreted possibly because of the condensed form of presentation. The first on page 1-3 states "The proposed Project would also provide APS with transmission capacity to meet forecast load demands in the Yuma area and an avenue for delivery of more economical sources of power available in the APS main system. The transmission capacity afforded by the proposed Project would, in short, allow APS to meet load growth in the Yuma area at least through the next decade." The second on page 3-6 reads "Among alternatives for meeting the utilities stated need for additional power would be adding generating capability. Neither APS nor SDG&E found this a reasonable alternative because of constraints of capital cost, national energy policy, environmental regulations, state-of-the-art technologies and the lead-time required to construct new generating facilities in relation to time-of-need. In the case of APS, no additional generating capability could be justified by the company's long-range forecast until after 1990."

B-9 (continued)

2

when one looks at 1990 and after. Yet, by 1990, even APS admits alternative generating sources in the Yuma area could be justified by their long-range plan. This is a serious contradiction that is glossed over in the Draft Environmental Document. If APS is going to have to build a generating source in the Yuma area anyway, the time to build such a source is now, not the 1990s, when construction costs will be much higher.

We thus feel that in regard to providing more electricity for the Yuma area, the following alternatives to the proposed action should be adopted:

- 1) energy conservation and load management, and
- 2) alternative generation sources

Comparing the energy conservation and load management programs of APS and SDG&E in the Draft Environmental Document (pp. 3-3 to 3-6), it is obvious that APS could be doing more. For example, SDG&E has a voltage reduction program and promotes and sells a much wider variety of energy conservation devices (compared to APS, for whom only the Hot Tap is listed). Furthermore, APS could adopt system-wide rate incentive programs and on-site load controls. These measures should be combined with construction of a generating source close to Yuma, which would impact a much narrower area (and of less environmental diversity) than the proposed 500 kv line. We agree with APS that it is undesirable to construct an oil or natural gas fired plant in the Yuma area and we are dubious about a coal fired plant because of a variety of problems, especially environmental pollution and habitat destruction in coal mining areas and air pollution from the power plant. But Yuma is one of the sunniest areas in the United States, receiving a mean of 92% of possible sunshins ("The Climate of Arizona," Louis R. Jurwitz and Paul C. Kancleser, Climates of the States, Washington, DC: U.S. Government Printing Office, 1959). If there is a perfect area for a solar-powered plant, it is the Yuma area, and indeed, the U.S. Department of Energy and the U.S. Water and Power Resources Service are considering building a solar plant near Yuma to produce 100 megawatts of electricity (Arizona Republic, October 1, 1980, p. A-1).

In the Draft Environmental Document it is argued that alternative generating sources in the Yuma area could not be built in time to meet local demand, but we suspect that if coupled with more active energy conservation and load management, a solar plant could be well within time to meet demand. It is also important to note that while SDG&E considered (although only very superficially) a solar energy plant to generate electricity, APS apparently did not even consider solar power as a means of fueling a generating plant in the Yuma area, as there is no mention of consideration of this alternative on page 3-13 of the Draft Environmental Document. This is a serious inadequacy of the analysis of how to meet demand for electricity in the Yuma area, for APS did not consider and then reject a solar plant in the Yuma area; instead, they never considered it.

What we have been addressing, then, is APS's part of the project—proposing to bring electricity to Yuma by doubling up with SDG&E, who could in fact get electricity to San Diego over the Palo Verde-Devers corridor. We have found that the future need for electricity in the

In the 1980-1990 time-frame APS will have generating capacity to serve its entire load from sources presently in service or under construction using mainly coal or nuclear fuel. These plants are remote from Yuma and therefore require transmission capacity into the Yuma area. It certainly would not be economical to have excess low-cost generation remote from Yuma and build another plant in Yuma to serve its needs.

The reference to 1990 is for the entire APS system. The long-range forecast shows that the APS system does not require that new plants be put in service until after 1990 to serve its systemwide load. We did not say that alternative generation capacity in Yuma after 1990 could be justified.

[Refer to SDES, Chapter 3, and Response No. 5.

[We agree that APS should encourage and implement additional conservation measures. However, we feel that a more accurate and complete description of APS's energy-conservation and load-management programs is provided in the SDES Chapter 3.

APS does consider all types of resources, including solar, in its resource plans. Large-scale solar energy, at present, is very expensive and is not economically competitive with conventional forms of energy production without significant financial support from the Federal government. APS is, however, participating in a solar photovoltaic research project at the Phoenix Sky Harbor Airport, plus three other solar heating and cooling research-and-development projects at APS's Service Centers and the Palo Verde Nuclear Generating Station Visitor Information Center. In addition, APS is presently studying the technical and economic feasibility of converting one of its oil-fired steam units in southern Arizona to solar in the late 1980s.

It should be noted that solar power does not provide "around the clock" base-load energy and is used as a peaking or intermediate resource. Even if a solar plant were constructed in the Yuma area, other facilities such as a transmission line to import energy would be required when there is no sun—such as cloud cover or at night—when solar energy would not be available.

In specific reference to the Arizona Republic's October 1, 1980 article regarding the 100 megawatt solar/hydro integration project that is being studied jointly by the Department of Energy and the U.S. Bureau of Reclamation, Yuma was selected as the best potential site for the project. However, the primary recommendation of the study (which was issued in July, 1980) is that a 2-1/2-year feasibility investigation be conducted first to develop detailed engineering, economic and environmental data. These findings could then be used to determine whether a project should be recommended to Congress for construction. The project under study, at present, is not firm, may not be economically feasible and is not timely.

B-9 (continued)

3

Yuma area could be supplied by alternatives other than routing a 500 kV line from Palo Verde to and through Yuma. We choose not to comment on whether SDG&E's forecast demand for electricity in the San Diego area is accurate, but merely point out that if APS were to generate power near Yuma, the SDG&E line could follow the Palo Verde-Devere corridor and there would be only one new powerline corridor established across Arizona instead of two. Since the electricity is going to California, it seems just to use that such projects should impact the Arizona environment as little as possible.

It is conceivable, however, that despite our reasoned arguments, the APS/SDG&E Interconnection Project will be built. In that case, we support the "environmentally preferred route" of the Draft Environmental Document (pp. 3-37, bottom, 3-38, top, and Figure 3-15), especially through the Yuma area and specifically at the Colorado River crossing (Set VII, Route 3 and Set VIII, Route 3). We further feel that the powerline should go underground at the Colorado River crossing so as to avoid mortality to birds flying up and down the river and to minimize visual impact. As it is "technically feasible" to install an underground line (Draft Environmental Document, pp. 3-15 and 3-16) and the distance would be less than one-half mile, we do not feel that over the 50 year life of the project, in terms of the number of birds saved, that the cost would be excessive. Moreover, the habitat along the Colorado River is unique for a desert area and increasingly rare, and should be subject to the highest consideration.

We are aware that consideration is being given to routes which would cross the Colorado River between Imperial Dam and below Laguna Dam in spite of the fact that these links (see Draft Environmental Document, p. 3-11) were eliminated from consideration as unreal alternatives, and thus were not considered in the Sets and Connectors phase of the study. We feel the Draft Environmental Document is accurate in its assessment of these links as less desirable environmentally than the environmentally preferred route Colorado River crossing. Furthermore, the Arizona Game and Fish Department and the U.S. Fish and Wildlife Service both find the environmentally preferred route to be superior and definitely feel the crossings between Laguna Dam and Imperial Dam would be less desirable (letter of September 17, 1980 of John N. Carr, Supervisor, Planning and Evaluation Branch, to Dr. R. E. Kary, Manager, Environmental Management, Arizona Public Service, and letter of Richard F. Morgan for Albert W. Jackson, Area Manager, Arizona-New Mexico Office, U.S. Fish and Wildlife Service, also to Dr. Kary, September 17, 1980).

However, if these links between Imperial Dam and Laguna Dam are to be considered, we request to be notified and consulted early in the process so that we will have enough time to develop a position on such links. Nevertheless, the Draft Environmental Document environmentally preferred route is also our preference and we hope that since APS and BLM have agreed on what is environmentally preferable, they will continue to support that route.

Sincerely,
Gwen Robinson Nancy Meister
Gwen Robinson, President Conservation Co-chair
Cary Meister
Cary Meister
Conservation Co-chair

G [Refer to Responses Nos. 6 and 7.

H [SDES responds to issue.

B-11



United States
Department of
Agriculture

Soil
Conservation
Service

3008 Federal Building
230 North First Avenue
Phoenix, Arizona 85025



October 8, 1980

State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, AZ 85073

Dear Sir:

We have reviewed the Draft Environmental Document, APS/SOC&E Interconnection Project, and have the following comments.

- A [1. The document did not discuss the impacts the proposal would have on prime farmlands. The issue needs to be discussed and impacts identified in the document. The location of towers on prime farmlands should be avoided if at all possible.
- B [2. The documents should discuss what erosion control features are planned to minimize the erosion during construction and on the maintenance roads after construction.
- C [3. We are concerned with the discussion of the soils on pages 4-7 and 4-8.

C [Page 4-7, Soils, paragraph 1, last sentence - The statement "---overall sediment transport out of the area is believed to be small," does not provide much confidence in the data.

D [Page 4-7, Soils, paragraph 2. In two places, it discusses fine and granular soils. This is confusing. Fine may be used in a broad sense to describe particle-size distribution (texture). It may also be used to describe size of structure aggregates, pores, roots, and mottles. We seriously question that the soils of channels and active sand dunes are granular. In most cases, they would be single-grained.

E [Page 4-8, Hydrology, Flood Hazard, last sentence. We question use of the term poor drainage. Poor drainage is defined as "water is removed so slowly that the soil remains wet for a large part of the time." We have very few soils in Arizona that fit the definition of poor drainage.

A [Refer to DES, Appendix D, and Response No. 4.

B [Geotechnical studies conducted for the Project assessed the potential erosion impacts that could result from the construction, operation and maintenance of the proposed transmission line. The results of these studies are contained in Chapter 2.0 of Volume I of the Phase II Corridor Studies. The Applicants have nevertheless committed to the following construction and mitigation measures, which would serve to lessen erosional impacts.

Construction Measures

1. Roads will be constructed in accordance with standard specifications and governmental requirements.
2. Roads will be built as near as possible at right angles to streams and washes.
3. Culverts would be installed where necessary.

C [See DES, Table 5-1, Generically Committed Mitigation, Nos. 1, 2, 3, 4 and 5. See also DES, Table 5-2, Selectively Committed Mitigation, No. 1.

C [The issue of sediment transport was not raised during our scoping process and was therefore eliminated from detailed study. Excepting washes, we believe the erosion potential of the study area to be generally low.

D [We agree. "Fine" has been used to describe particle size.

E ["poor drainage" in that context means relative to other soils in Arizona.

B-11 (continued)

State Director
Bureau of Land Management
Phoenix, AZ

2


F [

Table 4 and Figure 4-1. The description of soils does not fit within accepted use by pedologists. It appears to be more of a separation of land forms than of soils.

It would be desirable to include in the appendix "Soil Survey Interpretation" for those soils in the area. An example is attached.

We appreciate the opportunity to review the document.

Sincerely,



Thomas G. Rockenbaugh
State Conservationist

Attachment

F

[That is correct. However, we believe the description of soils was presented in the most effective way to assess soils that might effect or be effected by construction and operation of the proposed transmission line.

Table 2-2F (continued)
Complete Letters and Responses

B-19

MILLER STATE OFFICE BUL LAND MANAGEMENT		DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE CENTER FOR DISEASE CONTROL ATLANTA, GEORGIA 30333	
OCT 15 1980		RECEIVED B.I.M. STATE OFFICE OCT 14 / 4:30 AM '80	
SD ASSOC. SD CIV. AF. PAGE RESOURCES TECH. ST. MGT. ST. MGT. ST. MGT. ST.		October 9, 1980	
STATE OF ARIZONA Bureau of Land Management 2400 Valley Bank Center Phoenix, Arizona 85073		PHOENIX, ARIZONA	

Dear Sir:

We have reviewed the ASP/SDG & E Interconnection Project Draft Environmental Document for Maricopa and Yuma Counties, Arizona, and Imperial and San Diego Counties, California. We are responding on behalf of the Public Health Service.

A In our review of the document, we note that the number of single family dwellings and the number of housing subdivisions that would be highly impacted by this action are shown. However, we did not see any mention of relocation plans for the displaced people. This issue should be fully discussed in the final document.

B Page 3-2 states, "Rights-of-way would not be chemically treated unless necessary to comply with the permit requirements of public agencies." What types of chemical treatment may possibly be necessary by the applicant? What chemicals may be used? Where would these chemicals be applied, in what quantities, by what application methods, and by whom?

C The final document should address the air pollution levels that may be created by construction activities. This should include pollution levels from equipment as well as construction dusts. Potential noise pollution from construction equipment should also be addressed. Anticipated noise levels and their duration should be shown.

E The final document should state whether the action complies with the Secretary's Memorandum No. 1827 Revised: Statement on Land Use Policy.

Thank you for the opportunity of reviewing this draft document. We would appreciate receiving a copy of the final when it becomes available.

Sincerely yours,

Frank S. Lisella
Frank S. Lisella, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Division
Bureau of State Services

A The utilities do not have relocation programs, nor are such programs required by BLM and CPUC. Refer to Response No. 2.

B The Applicants do not expect to utilize chemicals for treatment of rights-of-way associated with the proposed transmission-line Project. No agencies have identified mitigating measures that would require chemical treatment of rights-of-way on either public or private lands.

C Air-resources studies were conducted for the proposed Project. The studies assess potential impacts that might result from construction, operation and maintenance of the line. These studies are contained in Chapter 10.0 of Volume II of the Phase II Corridor Studies. The studies are summarized in the environmental document and conclude that with application of certain mitigation measures (watering, limitation of construction traffic under certain circumstances and corpooling of construction workers), it should be possible to meet air-quality standards for particulate matter. While the Applicants are willing to consider implementation of the mitigation measures stated above, the actual mitigation requirements employed will be developed through the governmental permitting processes of the Federal government, affected states and other jurisdictions. BLM requires that on public lands dust-control measures, such as daily watering, be implemented on roads and disturbed areas within one mile of populated areas, during periods of heavy vehicular traffic, and in areas identified as having powdery soil conditions. In addition, the Applicants have already committed to the following generic and specific mitigation measures which will assist in minimizing impacts to air quality. See DES, Table 5-1. Generically Committed Mitigation, Nos. 1, 2, 3 and 4. See also DES, Table 5-2, Selectively Committed Mitigation, No. 1.

B-19 (continued)

D [Equipment repair areas and construction yard to be located on public land will be at least one-half mile from residence or business to reduce impact on local residents due to nighttime repair operations, noisy equipment and helicopters. Refer to SDES, Table 5-1, Mitigation Measure No. 10.]

E [The Secretary's Memorandum referred to is a policy established by the U.S. Department of Agriculture, whereas the BLM is an office of the Department of the Interior and therefore not required to respond to memoranda of USDA. BLM will respond to policies of the Federal Land Policy and Management Act and related regulations.]

B-27

ARIZONA STATE OFFICE
BUI. LAND MANAGEMENT

OCT 16 1980

7:45 A.M.
PHOENIX, ARIZONA

Stan Wagner
Bureau of Land Management
Arizona State Office
2400 Valley Bank Center
Phoenix, Az 85073

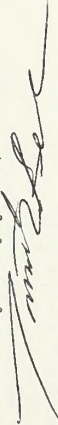
Dear Mr. Wagner:

In studying the draft environmental document for the proposed APS/SDG&E Interconnection Project, there are a few points that remain unclear and some with which I take issue.

- A** [First of all I take issue with some of the data on biological effects on humans being convinced that electromagnetic and photochemical emissions do adversely affect us.]
- B** [Secondly, much of the data on growth inducement, communications, visual intrusion, and natural scenic and acoustic qualities do not accurately reflect the rural attitude or situation. These must be dealt with to establish objectivity in the report and ensure that we who reside in highly impacted areas have some input into the possible consequences of the project.]
- C** [Thirdly, in providing for mitigating steps for possible adverse effects both in the scope and specific measures are not adequately provided for and enforcement processes are unclear.]

I hope that attention is given to these matters so that planning of this project does not overlook long term adverse impact to all the areas affected.

Very truly yours,



Timothy Reel
P. O. Box 346
Jacumba, Ca 92034

cc: Bill Y. Lee, Public Utilities Commission
Utilities Division
350 McAllister St.
San Francisco, Ca 94102

- A** [Your opinion has been noted. However, please read our conclusion on pp. S-10 and E-17 of the DES. "The results of studies, reported to date, on biological and health effects from electric fields are inconclusive in establishing that such effects do occur. On the other hand, it has not been clearly demonstrated that such effects do not occur. If they do, in fact, occur, experts are not in agreement that they pose a potential biological or health hazard." See Response No. 1.]
- B** [The scoping meetings and public contact program conducted for the proposed Project provided ample opportunity for input from people who live in urban, suburban and rural areas. The issues that surfaced as a result of scoping meetings and public contacts defined the focus of concerns addressed in the DES and SDES, and the environmental studies supporting both documents. We feel that the DES and SDES were objective documents that impartially represented rural, urban and suburban interests.]
- C** [We believe that the measures identified in the DES are real and enforceable and would mitigate the significant impacts to the degree possible. The CPUC will include appropriate mitigation measures as a condition of the certification for the Project. Enforcement of these conditions will be through the regulatory process.]

B-32



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

215 Fremont Street
San Francisco, Ca. 94105

Project #D-BIM-K08007-00

15 OCT 1980

Clair M. Whitlock
Arizona State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, AZ 85073

Dear Mr. Whitlock:

The Environmental Protection Agency (EPA) has received and reviewed the Draft Environmental Impact Statement (DEIS) titled ARIZONA PUBLIC SERVICE/SAN DIEGO GAS & ELECTRIC INTERCONNECTION PROJECT.

The EPA's comments on the DEIS have been classified as Category LO-2. Definitions of the categories are provided by the enclosure. The classification and the date of the EPA's comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal Actions under Section 309 of the Clean Air Act. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and the adequacy of the environmental statement.

The EPA appreciates the opportunity to comment on this DEIS and requests five copies of the Final Environmental Impact Statement when available.

If you have any questions regarding our comments, please contact Susan Sakaki, EIS Review Coordinator, at (415) 556-7858.

Sincerely yours,

Terrell H. Hunsch

Sheila M. Prindiville
Acting Regional Administrator

Enclosure

ARIZONA STATE OFFICE
BU. LAND MANAGEMENT

OCT 17 1980

7:45 A.M.
PHOENIX, ARIZONA

B-32 (continued)

General Comments

- A** [The DEIS does not clearly identify the service area for the projected need for 2000 MW by the year 2000 (page 1-11). More site specific requirements would provide the basis for a reasonable assessment of transmission line capacity and location requirements, for both decision makers and the general public.
- B** [A rationale for population and energy consumption projections should be provided based on more current data. Figure 1-3 only indicates data available through 1978. A comparison of past projections to actual needs would indicate past accuracy or projections which had overestimated energy consumption. Again, Figure 1-3 provides data from 1977-78 which, through continuing the curve, indicates negligible growth and thus no need for additional transmission lines.
- C** [The 20% reserve margin above peak reserve appears to be high considering the potential for load management. An analysis of the potential results of a reduction to a 10% or 15% reserve margin should be conducted. Additionally a more complete study of the use of localized, on-site private and public soft technology systems should be done. The potential for elimination of the Imperial Valley to San Diego connection or another section of the transmission corridor should be thoroughly explored.

- D** [Without additional power generation at the source, the transmission system would appear to be superfluous. The FEIS should specify the source of additional power which should be approved and operating at the time of the proposed project's completion or under construction at that time.

Water Quality Comments

The DEIS does not adequately address water quality impacts associated with construction and maintenance of the proposed project. The FEIS should include the following:

- E** [1. Water quality impacts caused by construction of specific tower footings, access roads, substations, microwave communications systems, etc., should be detailed and measures to mitigate environmental damage should be presented.
- F** [2. Adverse impacts to water quality resulting from ongoing maintenance activities related to these installations should be discussed. Specifically, the effects of the

- A** [The electric-demand projection for SDG&E was revised in the SDES to incorporate the California Energy Commission's currently adopted (BR III) demand forecast for SDG&E, adopted in January 1981. SDG&E's electric-service area includes most of San Diego County, a portion of southern Orange county, and a few customers in western Imperial County.
- B** [Even though there was a leveling off of growth in the 1977-78 time-frame, annual growth from 1978 to 1980 resumed at a rate of approximately 4 percent. Information obtained from the Yuma Chamber of Commerce, banks and other local parties indicates that the Yuma area annual population growth-rate will be on the order of 6 percent. The projected load growth of 5.4 percent for the next decade is not unrealistic and reflects the impact of continued population expansion and economic activity in the Yuma area. The SDES has been updated to 1980 (see Figure 1-3R).
- C** [The California Energy Commission's (CEC) currently adopted demand forecast for SDG&E incorporates conservation and load management reasonably expected to occur. The CEC has also determined that a 20 percent reserve margin is appropriate for SDG&E's electric system. Soft technologies were reevaluated in the SDES as Project alternatives. It was determined that soft technologies could neither individually nor collectively meet the stated need. Existing and planned transmission facilities linking PVNGS and the SDG&E service territory were reexamined in the SDES as routing alternatives to all or a portion of the proposed 500kV line. Such alternatives were found not to be viable.
- D** [The purpose of the proposed transmission system is to deliver power to Yuma from sources available in APS's main system, and to deliver to San Diego firm and economy purchases of coal-fired power SDG&E has obtained under contracts with Public Service Company of New Mexico (PNM) and Tucson Electric Power (TEP). It will also provide a path for delivery to San Diego of geothermal energy being developed by SDG&E and others in California's Imperial Valley, and possibly a path for geothermal energy SDG&E has purchased from Mexico under contract with Comision Federal de Electricidad. Sources of SDG&E power purchases from the PNM and TEP systems have received necessary construction approvals. SDG&E believes that there will be a payback in approximately four years. Also see the extended power purchases from TEP on page 3-7f of the FES.
- E** [Geotechnical studies conducted for the Project assessed the potential erosion and water-quality impacts that could result from the construction, operation and maintenance of the proposed transmission line. The results of these studies are contained in Chapter 2.0 of Volume I of the Phase II Corridor Studies. With regard to water quality, it was concluded that "Any increased siltation caused by the construction and operation of the transmission lines along the alternate routes will not have any appreciable adverse effect on the existing water-quality."
- Although the water-quality issue was never identified as a significant issue during any phase of the Project studies, including scoping, the Applicants have nevertheless committed to the following construction and mitigation measures, which would serve to lessen water-quality impacts.

B-32 (continued)

Construction Measures

1. Roads will be constructed in accordance with standard specifications and governmental requirements.
2. Roads will be built as near as possible at right angles to streams and washes.
3. Culverts would be installed where necessary.
4. Petroleum products will be disposed of at approved sites, and no oil or other chemicals will be released to streams or stream beds.

BLM Committed Mitigation

Where determined necessary, the BLM may:

1. Close spur roads and specified portions of the main access road upon completion of construction.
2. Construction of water-bars.
3. Restoration of disturbed areas.
4. Curtail or suspend construction activities.

See DES, Table 5-1, Generically Committed Mitigation, Nos. 1, 2, 3 and 4. See also DES, Table 5-2, Selectively Committed Mitigation, No. 1.

F

Ongoing maintenance activities are not expected to impact water quality. APS anticipates conducting all routine inspections of the line by air, whereas SDG&E plans both air and ground maintenance. APS does not propose to actively maintain access roads. SDG&E plans to maintain access roads. Many of the mitigation measures cited in response to Comment E above would apply to maintenance activities. Maintenance plans will be developed after completion of construction. These plans would be revised or modified as necessary to meet changing conditions. Strict adherence to the terms and conditions of the right-of-way grant and the maintenance plan will be demanded.

B-32 (continued)

-2-

project on drainage patterns and erosion should be addressed as well as any adverse impact on groundwater associated with those altered conditions. Mitigation measures for adverse impacts should be developed for implementation.

3. The discussion of growth inducement (pp. 5-39 through 5-41) should be expanded to include data detailing the projected demands on water supply and sewage treatment facilities in areas which will be impacted. This discussion should also include an assessment of the project's effects on Arizona's groundwater supplies and water quality.

Air Quality Comments

The DEIS does not adequately address air quality impacts associated with construction and maintenance of the proposed projects. The FEIS should include the following:

1. Air quality impacts caused by construction of the proposed action and its alternatives should be identified and quantified. Emissions from construction and associated vehicular use should be presented. Mitigation measures should be provided to reduce air quality impacts during construction. For example, soil watering during construction would lower fugitive dust emissions.

2. Air quality impacts caused by routine maintenance should be itemized and include projected vehicular use, both authorized and unauthorized on access road. Mitigation measures, such as treatment of road surfaces, should be included.

G

As stated in the SDES, the proposed Project's primary need is for oil displacement. Our analysis indicates that the proposed Project is growth-accommodating and not growth-inducing. Therefore, it is not expected to foster or encourage economic or population growth either directly or indirectly. The discussion of growth-inducement is included to meet the requirements of the California Environmental Quality Act and applies only to the SDG&E service area. As stated in response to Comments E and F above, no appreciable adverse effect on existing water-quality or groundwater supplies in Arizona, is anticipated.

H

See response to Comment C of Letter No. B-19.

I

Only one-third of the environmentally preferred route would require new access. Considerations in locating the study corridors included existing access, avoidance of areas closed to vehicles and sensitive soil conditions. If the proposed Project is approved, access roads would generally remain open. In specific locations, the roads may be closed to protect resource values or because of hazards. Closure of roads on public lands is decided through BLM planning, which attempts to balance the need to use the land and protect the resources. Because of the minimum maintenance-activity planned, treatment of road surfaces is not anticipated.

B-32 enclosure

EIS CATEGORY CODES

Environmental Impact of the Action

IO—Lack of Objections

EPA has no objection to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER—Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EJ—Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1—Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2—Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3—Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.

B-33



United States Department of the Interior
FISH AND WILDLIFE SERVICE
ARIZONA STATE OFFICE
BUREAU OF LAND MANAGEMENT

AREA MANAGER
2800 Cottage Way, Room E-2740
Sacramento, California 95825

OCT 17 1980

OCT 15 1980

7:45 A.M.
PHOENIX, ARIZONA

Memorandum

To: State Director, Bureau of Land Management
Phoenix, AZ 85073

From: Area Manager (ES-LN), Laguna Niguel, CA

Subject: Review of Draft Environmental Document (EIS/EIR)
Arizona Public Service and San Diego Gas and Electric
(APS/SDG&E) Interconnection Project

We have reviewed the Draft Environmental Document described above and provide the following comments.

GENERAL COMMENTS

A good job was done in addressing the impacts of this project upon fish and wildlife resources. We strongly support the expressed concept of maximal use of existing rights-of-way and roads. We also support the several mitigation measures incorporated to minimize impacts, particularly to all species of special status and to unique and highly productive habitats. Mitigation includes notably the preconstruction examination of specific sites of concern by a qualified biologist resulting in the implementation of measures to minimize impacts. This mitigation should assure that no net loss of riparian, marshland, or vernal pool habitats will occur due to the project.

The Bureau of Land Management (BLM) is reminded of their obligation to insure that their action will not jeopardize the continued existence of any federally listed endangered or threatened species. The BLM is also reminded of the utility in making the same determination for species that are candidates for federal listing. Where those determinations conclude that the project may affect a candidate or listed species, informal or formal consultation, as appropriate, should be pursued with the Fish and Wildlife Service (FWS). Recent additions to the list of Federal candidates for endangered or threatened status that are not noted in the draft EIS/EIR (see P. 4-14 and Table 4-4) include peninsular bighorn sheep (*Ovis canadensis cremnobates*), spotted bat (*Euderma maculatum*), California yellow-billed cuckoo (*Coccyzus americanus occidentalis*), California black rail (*Laterallus jamaicensis coturniculus*), ferruginous

A With the inception of studies for this Project, we requested a list of proposed and listed threatened or endangered plant and animal species that may be present in the study area. A letter from the Regional Director, Region I Fish and Wildlife Service dated October 12, 1979 provided such a list, which was used in the draft environmental document. Unfortunately, there is no formally-published list of candidate species, which causes confusion (e.g., ferruginous hawk is not on the list, desert tortoise is - Koy Franzweib, USFWS, Sacramento; personal communication 21 July 1981).

B-33 (continued)

hawk (Buteo regalis), least Bell's vireo (Vireo bellii pusillus), California red-legged frog (Rana aurora draytoni), San Sebastian leopard frog (Rana sp.-as yet undescribed), flat-tailed horned lizard (Phrynosoma m'calli), gila monster (Heloderma suspectum), rosy boa (Lichanura trivirgata), bonytail chub (Gila elegans), razorback sucker (Xyrauchen texanus), and desert pupfish (Cyprinodon macularius).

SPECIFIC COMMENTS

B PP. 3-19, 20 - Construction: New roads necessary for construction purposes only and not needed for maintenance access should be minimally constructed in that the land and existing habitats should be altered to the minimum extent necessary. Adequate access can probably be gained in some areas by traversing the terrain without building a road. Traffic and all other impacts should still be kept to as narrow a belt as the road would define, if it were built, and disturbance of perennial plants should be avoided. Access to these areas, when their usage is completed, should be restricted so that such areas would eventually return to a natural state.

Perennial vegetation at all construction yards and batch plants should be avoided where possible and crushed rather than removed where avoidance is not possible. Belts and islands of undisturbed native vegetation should be left along fences, around buildings, and intermittently through areas used for construction purposes. The more vegetation that can be left untouched, the quicker revegetation will occur. The concept is one of not changing existing natural conditions any more than absolutely necessary, along with facilitating a quick return to as near natural conditions as possible.

C Table 4-4 and p. 4-14 - Ecological Resources, Special Status: The status of candidate for Federal listing was not noted for several species (see above under general comments).

D Table 5-1 - Generically Committed Mitigation, #5: Native plant materials should be used for all revegetation and reseeded.

E Table 5-2 - Selectively Committed Mitigation, #1 and 2: To further reduce scarring and disturbance, all roads built in areas not already disturbed and needed only for construction (those not needed for maintenance purposes) should be closed after use and allowed to return to a natural state. In areas of high wildlife use or where special status plants or wildlife occur, after appropriate soil preparation roads should be reseeded or replanted with plants native to that area.

In all areas of relatively undisturbed natural conditions prior to project activities, all roads built and necessary for maintenance operations should be effectively closed to ORV use. Effectively closing these

B [We agree. See SDES, Table 5-1, Generically Committed Mitigation, Nos. 1, 2, 4 and 5.

C [See response to Comment A above.

D [We agree. Furthermore, revegetation and reseeded should not be done with exotic species. It is preferable to allow natural revegetation to occur rather than seeding with nonnative material.

E [In specific locations the roads may be closed to protect specific resources or because of hazards. Public lands used for temporary access roads, equipment storage and other construction activities shall be restored by Applicant to the satisfaction of the BLM, or to the landowner in the case of private ownership. Refer to SDES, Table 5-1, Generically Committed Mitigation, Nos. 1, 2, 4 and 5.

B-33 (continued)

roads may require ditching, removal and revegetating at access points to reduce visibility, or other actions.

F Table 5-2, #3: In areas of high raptor and migrant bird use, careful scrutiny should precede the positioning of towers and lines, and design modifications should be incorporated to minimize the potential for bird strikes. The FWS has published a report entitled "Impacts of Transmission Lines on Birds in Flight" (FWS/OBS-78/44). Therein are discussed the effects of lines in causing avian mortality as well as measures that will reduce bird strikes. One serious consideration should be the inability of some birds to detect the presence of thinner wires such as static and guy wires. Such wires should be permanently marked with regular spaced high visibility flags, strips, or sections of casing to make them more visible to birds. Alignment of towers and lines should take into account the direction and height of bird flight patterns and make use of existing natural obstructions to flight paths.

G Transmission lines and towers are often heavily used for perching and nesting by raptors even where natural relief and trees are available. A beneficial effect of this project could be the enhancement of such use by the inclusion of small platforms on some towers. These platforms could be incorporated at a very low cost and may be highly beneficial to raptors. It is recommended that "Suggested Practices for Raptor Protection on Power Lines" (Raptor Research Foundation 1975) or other similar literature be utilized in project design.

H P. 5-46: All access roads into areas existing in a relatively natural state prior to the project should be closed to ORV usage. Closure methods should be monitored to ensure their effectiveness (see previous comments for Table 5-2).

SUMMARY

Through careful planning and construction, this project could avoid the potential to adversely affect fish and wildlife resources through unnecessary habitat destruction, impacts to sensitive species and important habitats, and bird strikes. Implementation of the mitigation measures discussed in the draft EIS/EIR and the additional measures provided in these comments should significantly reduce potential adverse impacts.

Questions regarding these comments should be referred to Messrs. Dick Zembal or Ralph Pisapia of our Laguna Niguel Field Office at (714) 831-4270, FTS: 796-4270.

Sincerely yours,

Area Manager

F Conflicts between birds and wires are greatest in areas of heaviest bird use (in this study, the lower Colorado River). Even then, actual conflict is low. Marking wires away from concentration areas, or in raptor areas (e.g., all Arizona links) is probably not necessary. Refer to Response No. 6.

G Your comments on raptor platforms have been noted. Raptor protection is incorporated in the design of the transmission lines.

H See response to Comment E above, and response to Comment I of Letter No. B-32.

B-34

11344 Wildcat Canyon Rd.
Lakeside, Calif. 92040
October 13, 1980

State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona. 85073

ARIZONA STATE OFFICE
BU. LAND MANAGEMENT

OCT 17 1980

7:45 A.M.
PHOENIX, ARIZONA

Dear Sir:

We are very concerned about the effect of connector N (Link 151) of the new S.D.G.&E. Interconnection Project (Application #59575) on our area. We find the environmental impact review incomplete and are listing the impacts we would like to see reviewed with ALL people concerned.

The reason we ask for this is we've seen too much "go ahead and put it though---we'll worry about the effects later---maybe no one will notice we have the 'cart before the horse'" attitude. This is supposed to be a public utility, but their own profits have been apparently put ahead of serving the people.

The present route of this link will take the line through the heavily populated area of Eucalyptus Hills in the town of Lakeside.

The Table 3-9 of Environmental Consequences lists under "agency-public comments" that the town of La Mesa was concerned about electromagnetic effects and visual impacts. Was this a honest mistake or just another attempt to keep the people around the actual residences from being concerned for them and coming to hearings to help.

Our land lies within the alternate route for this area in Euclyptus Hills -we think--. S.D.G&E. mappers were here looking without any pre-notice. We still don't know, even though we expressed concern at the Oct.7 hearing.

Nowhere in the report can we find the proposed density of

A [The issue "Individual property-owners (Lo Mesa) - electromagnetic effects and visual impacts" was identified at the Lo Mesa Scoping Meeting on June 28, 1979. The issue was presented by the property-owners in the area of Connector N (Link 151).]

B-34 (continued)

(2)

B [the housing development on this alternate route. It is for 250 residences with 'impact sensitive' permanent open space surrounding it. Within the open space will be placed a sewage treatment plant. The impact of this will be immense on the area and the erosion prone steep slopes cannot take anymore disturbance. Lakeside was heavily hit by floods last winter.

C [The proposed county park listed is a park for handicapped children. This is not a area where we can have a power line that cannot be absolutely defended as to having absolutely no effect on people and their environment. This park is Stelzer Park, and has existing towers now that should even probably be looked into.

D [The area between the park and the development is the only remaining wildlife migration area left in the lower part of this canyon - our land is left open and they move through it too. Check th E.I.R. report for Stelzer Park done by the county of San Diego.

The people in charge of Stelzer Park are not even aware of a alternative route branching off their power poles to cover more of their park. We expressed concern to them about this.

E [Another are that has not been covered, that we can see is the "aircraft hazards" for our forestry fixed wing aircraft when they are on an approach to drop retardant. In questioning a State Forestry aircraft dispatcher, we were informed they need to use "hazard maps" now showing where they can dispatch their planes. When also approaching a high tension wire line from the ground, fire fighting handcrews have to be withdrawn to wait until the fire gets to the other side of the line. We were told that this can many times cause a major destructive fire. This area leans heavily on this "wildland area" type of fire protection yet nothing has been mentioned in this report.

We thank you for granting us an extension on this study.

B [Refer to DES, Figure 4-5.

C [The proposed county park, identified in Figure 4-8 of the DES, was planned after the construction of the existing transmission lines. Therefore, we assume that the park design accommodates the existing right-of-way. Since the proposed transmission line would be within the existing corridor, no significant impact to park development is anticipated. See SDES, Appendix G, for discussion of alternative routing.

D [We do not believe that the transmission line would interfere with wildlife migration.

E [Discussions with the California Department of Forestry have not identified any specific problem with respect to hazards to forestry aircraft. We recognize the potential hazard of transmission lines to fire-fighting crews. This impact is offset by exposed mineral soil provided by the utility access roads, which could provide both faster access to a fire and impede the spread of fire. In addition, refer to DES, page 3-21.

B-34 (continued)

(3)

We are not familiar with other links on this route, however, we heard enough testimony at the Oct. 7 hearing to see that other residences are being heavily impacted, and other wildlife areas being affected even more than shown on the E.I.R. maps. DO WE REALLY NEED THIS LINE AT ALL? Energy conservation is really taking hold in San Diego county. It will show up even more this next year. We think S.D.G.&E. is rushing a power line that time will tell is not needed at all.

Thank you for your time.

Sincerely;

Merle Hamlet
Patricia Hamlet
Mr. Merle Hamlet

Mrs. Patricia Hamlet
11344 Wildcat Canyon Rd.
Lakeside. Calif. 92040

F [Refer to SDES, Chapters 1 and 3, and Response No. 5.

Table 2-2F (continued)
Complete Letters and Responses

B-35

B ICE BABBITT, Governor

C. GENE TOLLE, Phoenix, Chairman
WILLIAM H. BEERS, Prescott
CHARLES F. ROBERTS, O.D., Bisbee
FRANK FERGUSON, JR., Yuma
FRANCES W. WERNER, Tucson



Director
ROBERT A. JANZEN

Deputy Director
ROGER J. GROENEWALD

ARIZONA STATE OFFICE BUL. LAND MANAGEMENT	
OCT 15 1980	
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	INFO

ARIZONA GAME & FISH DEPARTMENT
2222 West Gateway Road Phoenix, Arizona 85001

October 10, 1980

Clair M. Whitlock
State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona 85073

RE: Draft Environmental Document
(EIS/EIR) - APS/SDGE Inter-
connection Project

Dear Mr. Whitlock:

Our Department has reviewed the above document and offers the following comments.

Specific Comments on the Document:

A [Figure 5-3 "Ecological Resources Residual Impact Levels." This figure is very difficult to interpret because of the graphic techniques used. Because of the manner in which the information is presented this figure appears to indicate a uniform level of residual impact on ecological resources along the entire route within Arizona. The presentation of this information should be clear and concise on this figure.

Routing of the Transmission Line:

Our Department believes that the "Environmentally Preferred Route" described in the document is best from the standpoint of impact on wildlife and wildlife habitat.

B [Our Department is adamantly opposed to any crossing of the transmission line through the Mitty Lake Wildlife Area.

C [Apparently, consideration is currently being given to alternative routes which would cross the Colorado River north of Yuma including a number of links not described in the draft environmental statement.

A [We believe the graphic presentations are clear and concise.

B [The preferred route does not traverse Mitty Lake Wildlife Refuge.

C [SDES responds to issue.

B-35 (continued)

Clair M. Whitlock

-2-

October 10, 1980

The potential for impact on wildlife and wildlife habitat along these additional links should be evaluated and documented if they are to receive serious consideration.

Overall, the document appears to be generally adequate in describing potential impacts of this transmission line on wildlife and wildlife habitat.

We appreciate the opportunity to review and comment on this document.

Sincerely,

Robert A. Jantzen, Director

William E. Werner

William E. Werner
Habitat Specialist
Region IV, Yuma

WEW:kh

cc: Planning and Evaluation Branch, Phoenix

B-38



United States
Department of
Agriculture

Soil
Conservation
Service

2828 Chiles Road
Davis, CA
95616
(916) 758-2200

October 15, 1980
ARIZONA STATE OFFICE
BU. LAND MANAGEMENT

Mr. Clair M. Whitlock
State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona 85073

OCT 20 1980
7:45 AM
PHOENIX, ARIZONA

Dear Mr. Whitlock:

The Soil Conservation Service has reviewed the draft environmental document for the proposed APS/SD&E Interconnection Project. We have the following comments:

Prime land received adequate consideration. There appears to be no conflict with proposed SCS or other agency projects.

From the information in the document, we were unable to determine the impact, if any, on wetlands. Neither were we able to determine the floodplain effects, if any. Further effects of the wildfires were not considered. We feel the following points were not adequately considered: provision for erosion control and water management during construction; effects of water discharge from project lands and water quality; effects of disruption of natural drainage patterns; provisions for stockpiling, conserving, or properly disposing of topsoil; pollution impacts and minimizing their adverse effects. Consideration of these points, we feel, will strengthen and improve the quality of this document.

We appreciate the opportunity to review and comment on this study.

Francis C. H. Lum
FRANCIS C. H. LUM
State Conservationist

cc: Norman Berg, Chief, SCS, Washington, D.C.
Jack Smith, AC, SCS, Escondido, CA

A

[No impacts are anticipated on wetlands or floodplains. Regarding wildfires, see SDES, page 3-21. Erosion control, disruption of natural drainage patterns, water management and water quality during construction are addressed in the response to Comment E of Letter No. B-32. We believe that SDES, page 3-25s, adequately addresses clean-up issue.

B-44

RESPONSE TO DRAFT ENVIRONMENTAL DOCUMENT FOR APS/SDG&E
INTERCONNECTION PROJECT.

A [The Draft Environmental Document does not cover the segment of the line referred to as Miguel to Los Coches to Mission Tap. This is a double circuit 230,000 volt series of towers and lines. The reason for this is not clear other than the study says on page F-1 (Appendix) that a study was conducted between February and June of 1977 and that the results were to use an existing right of way. The results are not in any way incorporated into the current document.]

The existing right of way is 200 feet wide and is now bisected by an existing 136,000 volt line. This leaves less than 100 feet for the proposed "system". The proposed double circuit 230kV lines will share the same 200 foot easement and be placed on the northern edge, or the residential side, of the right of way in the Eucalyptus Hills area.

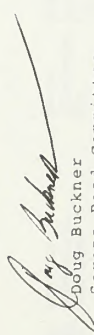
B [As a matter of fact, Tower #14 is planned to be within 25 feet of a residence. What is the effect of double circuit 230kV towers and lines on people who live literally right next to them? This study concerns itself with 500kV lines and measurements taken at 100 feet and 200 feet from the tower center line. Other studies indicated that high voltage lines pose health problems for people living near them (see Dr. Califano's Presentation Paper).]

Other undesirable effects for residential areas are also not considered, such as:

C [- The view will be obstructed by existing 136kV lines and also by double circuit 230kV lines.]

D [- The noise level at the edge of the right of way will be unacceptable. It is equal to measurements taken at the tower in this study.]

E [On initial examination, it seems like a logical course to pursue, use an existing "right of way" for additional lines and towers. It is, upon closer examination a poor alternative from every standpoint except one: it may save the utility money if the original right of way documents will legally allow the construction of the additional lines. In conclusion, economic factors should not govern the selection of this proposed route. These lines should not be placed on residential areas. If they must be constructed at all, then they should be situated in less inhabited, safer areas, such as that existing north of Lakeside.]


Doug Buckner
Serena Road Committee
12029 Serena Road
Lakeside, California 92040

A [In the DES the Miguel to Los Coches to Mission Tap segment of the preferred route is referred to as Connector N or Link 15].]

B [Refer to DES, Appendix E and Response No. 1.]

C [The visual resources were inventoried and assessed in Chapter 5 of the DES and SDES. Refer to Response No. 12.]

D [Refer to DES, Appendix E (Section 2.1) and Response No. 1.]

E [Refer to SDES, Appendix G (pages G-9s to G-11s) and Response No. 12.]

B-45a

The Aeronautics Division of the Arizona Department of Transportation has the following comments. For any additional information, please contact Mark Meyers, Airport Program Manager, 261-7756.

Subject #1: Gila Bend Municipal Airport

Plots of imaginary surfaces on the supplied map indicate several intrusions and/or possible conflicts with the subject airport. Sloping elevations toward the river offer some margins for options passing to the north of the airport. However, the close proximity to the airport could present hazards to low flying aircraft. Additionally, the airport manager advises that crop dusting traffic is substantial in the area.

Recommendations: Do not support options 9, 11, and 12.

Subject #2: Dateland Airfield

It is a real possibility that the option passing to the south of the airport will intrude into the 150' (horizontal) imaginary surface. The proposed power line would pass within 3600' from the runway, and the area south of the airport slopes up, although gently. Calculations indicate a 127' transmission tower in this area would be only 5' under the horizontal surface. The margin of error inherent in these calculations is easily equal to this.

Recommendations: Do not support option 19.

Subject #3: Yuma International Airport

Several of the options to the east of the airport fall within the 150' horizontal imaginary surface. It should be noted this is a precision instrument airport and all imaginary surfaces are expanded. The subject area is generally flat with occasional abrupt drops in elevation. This is typical of stepped flood plains due to ancient meandering rivers. Because of this level terrain, the options to the east may be acceptable. However, again significant error is inherent in the calculations. One option to the west falls within the 150' horizontal surface area, but significant elevation differences appear to negate its impact on the airport.

Recommendations: Do not support options 57, 58 and 61. Option 64 passes within 5500' of the airport, but may be considered viable after on-site inspection. Additionally, appropriate military authorities should be contacted for their input, if this has not been done already.

A [Environmentally preferred and BLM-preferred routes do not affect area. Your comments have been noted and will be considered in the final decision.

B-46

November 3, 1980

Mr. Stan Wagner
Bureau of Land Management
Arizona State Office
2400 Valley Bank Center
Phoenix, Arizona 85073

Gentlemen:

Mr. Bill Y. Lee
Public Utilities Commission
Utilities Division
350 McAllister Street
San Francisco, California 94102

Subject: APS/SDG&E Interconnection Project
Draft Environmental Document
(EIS/EIR)

The Environmental Impact Report raises more questions than it answers and seems to be inconsistent with fact. In testimony in El Centro there were questions raised as to the accuracy of the document with respect to actual geographical placement of lines. There was also testimony pointing out that the proposed right of way is in conflict with the Imperial Valley General plan and the wishes of the people residing in the Valley.

The following items are of environmental significance to those people whose lives, property, and livelihood will be affected by this project. These are also items that the EIR does not address in depth, if at all.

1. The corridor through our property that the San Diego Gas and Electric Co. would like is 320 feet wide--room for two 500 kv lines. This one million volt capacity is not addressed in this document anywhere that I could find. Why?
2. Air quality data for the study has been taken only at the western end of the proposed line, according to page 4-4. Table 4-1 shows that the air quality will not meet EPA standards. No study was done for the eastern county (Connector K). What will be the effect on our air quality? Can you approve this project without meeting EPA requirements?
3. The geotechnical study was accomplished in three days of field work and one passover by helicopter. Is this to be construed as a comprehensive study for a project of this magnitude?
4. The right of way would not be chemically treated unless necessary to comply with the permit requirements of public agencies. What chemicals? Which agencies? Does the property owner have any right to limit use of chemicals that might be detrimental to the use of the rest of the property or those who must live there?

- A [Only one 500kV transmission line is proposed on a 200-foot right-of-way. SDG&E has indicated that they have no plans for a second transmission line.
- B [Air quality was not identified as a major issue during the scoping meetings. Therefore, detailed studies were not conducted throughout the study area. However, as stated in the DES on page 4-4, "pollutant levels outside of the urban areas can be expected to be less." Impacts of the proposal to air quality are expected to be minimal.
- C [An enormous amount of secondary data was available and we believe the study was adequate. Also, geotechnical issues were not considered to be a major concern.
- D [See response to Comment B of Letter No. B-19.

B-46 (continued)

Mr. Stan Wagner, BLM
Mr. Bill Y. Lee, PUC
Page 2
November 3, 1980

- E** 5. This report vaguely addresses the impact on existing land use plans such as subdivisions, etc. It does not mention future land use except in the interest of SD&KE allowing them to procure an easement wide enough for expansion. Do the property owners have the right to assess the highest and best use of their land in future years?
- F** 6. What effect will the line have on the grazing of range cattle? The articles that I have read and people I have talked to with experience in this matter site poor milk production, aborted calves, and problems with cattle refusing to cross under these lines. The report does not address this at all. Since the preferred route bisects our oak grove and meadow land, with the best grazing south of the proposed line and the water on the north side, we will end up with 200 acres of land unuseable for any purpose.
- G** 7. I have found nothing in the EIR for impact on the economic environment of the property owner. In fact, Table 4-5 lists Connector K as passing through county and other public lands. No mention of private property with the exception of one mobil home mentioned on 5-13. My home, my father's home, and two neighbors across the road are within 750 feet of a proposed tower site--yet, we will not be affected?
- H** 8. The noise levels are said to be in the range of from 33 dBA to 59 dBA. This ranges from a normal whisper to the threshold of annoyance, an annoyance we have not had in the past 30 years on our property and one which I am sure is rated way too low in the EIR. The predicted noise levels are stated on page 5-23 as being the same or below the ambient noise levels. The above values stated on 5-35 tend to contradict this.
- I** 9. Photo chemical oxidants--this problem discussed on 5-35, has its results based on "information in current literature." No mention of what literature and, from the context, obviously not the literature that I have read. The same with electro magnetic fields. Studies in the eastern United States conclude that there is a definite health and safety concern associated with constant exposure. The only conclusion found in the EIR is that it has not been clearly demonstrated that biological effects from long term exposure do not occur. Why has this not been researched further? And, if proven to be harmful, who will be the responsible agency if this project is approved?

- E** Property owners determine highest and best future use of their land through local planning and zoning (e.g., future county or city land use plans) unless preempted by a demonstrated higher public need. For a more detailed discussion of land-use impacts, refer to Phase II Corridor Studies, Volume II, Wirth Associates, August 1980, Chapter 7.0.
- F** Refer to DES, Appendix E, and Response No. 1.
- G** Private property is included under jurisdiction in the category of "County and Other" in Chapter 4 of the DES and SDES. Impacts on the "economic environment" of the property owner would be mitigated by compensation. Refer to Response No. 2.
- H** We do not believe there is a contradiction. The existing audible-noise levels referred to on page 5-23 and the measured audible-noise levels documented on page 5-35 are within the range from 33 dBA to 59 dBA.
- I** Refer to DES, Appendix E (Section 4.0) and Response No. 1.

B-46 (continued)

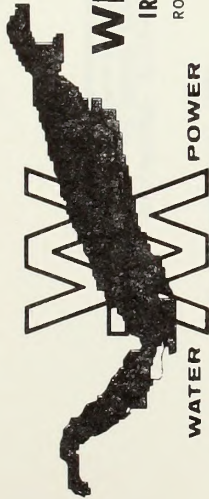
Mr. Stan Wagner, BLM
Mr. Bill Y. Lee, PUC
Page 3
November 3, 1980

This letter is addressed to the BLM and PUC who are the authors of the environmental report. I realize that it is generally an exercise in futility to address critically a governmental agency or bureaucracy about its own work. However, if you do not adequately answer the questions raised by us and other affected individuals, this will continue to appear to us as a conspiracy by your agencies and the San Diego Gas and Electric Co. to encroach on our civil rights and deny us our constitutional guarantees.

Sincerely,

Robert O. Maupin
Robert O. Maupin, President
Maupin, Inc.
Star Route 1, Box 27
Boulevard, California 92005

B-47



WELLTON-MOHAWK
IRRIGATION AND DRAINAGE DISTRICT

ROUTE 1, BOX 19 WELLTON, ARIZONA 85356
TEL: (602) 785-3351

November 11, 1980

ARIZONA STATE OFFICE
BU. LAND MANAGEMENT

Clair M. Whitlock
Arizona State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona 85073

NOV 14 1980

7:45 AM
PHOENIX, ARIZONA

Re: 500 kV APS-SDGE Transmission Line Routing
Link 28 vs Links 29, 30a & 30b

Dear Mr. Whitlock:

As you are aware, there is an ongoing public disturbance in this area relating to the routing of the referenced 500 kV power line. This will continue until the public is satisfied with the accommodation of their concerns.

One of these concerns is the abandonment of link 28 in the routing study in favor of links 29, 30a and 30b. The latter are objectionable to the public in this area.

Link 28 provides a shorter, straighter route, completely out of site and is \$700,000 less costly to build. Arizona Public Service has expressed preference to this route. The Yuma Proving Ground personnel have indicated they have no problem with this route.

There is a potential for old unexploded ordnance, but this should present no problem. The same situation existed in the Dateland area when a MX missile test facility was established on a military base. The relatively large area was cleared and certified clean in a very reasonable time.

It is our understanding the main opponent of this link 28 is the BLM. Since public opinion is granted as having significant influence in evaluating the preferred routing, it seems only appropriate to give this location a very significant consideration. This would eliminate virtually all public dissent from the people to the south.

We would like to work with you on bringing about this change. If you need further support for the opposition to the present route, (Link 29, 30a 30b) this can be supplied.

A [Refer to SDES, Table 3-9(R), page 1 for comparison of environmental consequences. Refer also to Response No. 10.]

B [Your comments have been noted and will be considered in the final decision.]

B-47 (continued)

November 11, 1980

Page 2

Clair M. Whitlock
Arizona State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona 85073

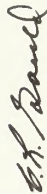
Re: 500 kV APS-SDGE Transmission Line Routing
Link 28 vs Links 29, 30a & 30b

Also, if there are other opposing agencies that need to be conferred with, please supply their names and we will make contact.

Thank you for your consideration in this vital matter.

Sincerely yours,

WELLTON-MOHAWK IRRIGATION
AND DRAINAGE DISTRICT



C. L. Gould
Manager

CLG/mw

cc: Tom Choules
Tommy Long, YCWUA
C. W. Slocum
Senator Barry Goldwater
Senator Dennis DeConcini
Congressman Bob Stump
Don Roberts, APS, Yuma

C-1

A-59575
Paul Eyle

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE
630 Sansome Street
San Francisco, California 94111
OCT 10 1980

1950
October 8, 1980



Mr. Bill Y. Lee, Project Manager
California Public Utilities Commission
350 McAllister Street
San Francisco, CA 94102

Dear Mr. Lee:

We have reviewed the combined draft EIS - EIR for the APS/SDG&E Interconnection Project. On balance, the document is very comprehensive and of high quality. However, we do suggest that a discussion of the Southern California wildfire problem and the fire-flood sequence be included in the final document.

Wildland fire protection in the project area in San Diego County is the primary responsibility of the California Department of Forestry. The Mediterranean climate and flammable vegetation types make this area particularly susceptible to wildfires. When these wildfires are followed by the high intensity rainstorms that are typical in Southern California, extensive flooding often results. Both the wildland fire and flood problems in this area could have some influence on or be influenced by project operations.

Thank you for the opportunity to review your report.

Sincerely,

Zane G. Smith, Jr.

ZANE G. SMITH, JR.
Regional Forester

A

Refer to DES, page 3-21 for discussion of Fire Protection Plan and pages 4-7 and 4-8 for discussion of soil-erosion potential and flood hazard.

We recognize the fire-flood sequence but do not believe it will significantly influence or be significantly influenced by the proposed Project. We are unable to find any record of a fire caused by a high-voltage transmission line.

The San Diego Ranger Unit of the California Department of Forestry has not experienced a fire problem caused by high-voltage transmission lines. The Boise Interagency Fire Center has no records of a fire caused by high-voltage transmission lines (personal communication, Bill Lyons, 7/30/81). Tower sites are located to span areas of potential flood and avoid existing fault scarps or known faults. In addition, see DES, page 3-21.

C-2

A-59575

~~KHK~~ / BYC



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

IBWC BUILDING
4110 RIO BRAVO
EL PASO, TEXAS 79902

ENVIRONMENTAL
IMPACT BRANCH
OCT 10 1980

Mr. Bill Y. Lee
Project Manager
California Public Utilities Commission
350 McAllister Street
San Francisco, California 94102

Dear Mr. Lee:

We appreciate the opportunity to review your Draft Combined Environmental Document (EIS/EIR) "APS/SDG&E Interconnection Project."

We note that you have considered routes adjacent to the international boundary. In 1907, a Presidential Proclamation was issued, which remains in effect:

"...there are hereby reserved from entry, settlement or other form of appropriation under the public land laws and set apart as a public reservation, all public lands within sixty feet of the international boundary..."

A [This sixty foot strip is located, with few exceptions (privately owned lands), along the entire international boundary in Imperial and San Diego Counties, California. Should any of your alternative routes being considered include works within this corridor, this agency asks that you confer with us in your final planning as to the specific locations of the sixty foot corridor, and uses possible within it.

Sincerely,

George R. Baumli
George R. Baumli
Principal Engineer
Investigations & Planning Division

A [No alternative route falls within the sixty-foot strip.

C-3



A. 59575
1380
ENVIRONMENTAL
IMPACT BRANCH
MAY 16 1980
IN REPLY REFER TO
20C2 DS:jp
Ser P3-096

DEPARTMENT OF THE NAVY
WESTERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 727
SAN BRUNO, CALIFORNIA 94066

California Public Utilities Commission
350 McAllister Street
San Francisco, California 94102

Attention: Mr. Bill Y. Lee, Project Manager

Dear Mr. Lee:

Reference is made to the Draft Environmental Document (DED) for the proposed APS/SDG&E Interconnection Project and the associated public review hearings conducted at El Centro and San Diego, California on 6 October 1980 and 10 October 1980, respectively.

As one of our functions, this Command provides planning support services to Navy and Marine Corps activities in the nine western states and includes assessing the impact of local and state agency planning efforts on Naval facilities and development plans. Accordingly, general testimony was presented by Naval Air Facility (NAF) El Centro and this Command at the referenced public hearings to emphasize the opposition to final and alternate project links that can potentially encroach or adversely impact on the mission, air operations, and future expansion of naval facilities.

Specifically, this Command emphasizes and reiterates the concerns and objections noted in NAF El Centro's letter to your office of 12 May 1980 concerning the proposed California Desert Conservation Area Plan. In summarizing these comments, it is reaffirmed that the 500KV transmission lines and #125' towers associated with final link 136 would interfere with vital air target operations which include the towing of drone targets by steel cables, and would expose personnel to extremely hazardous conditions. Similarly, links 136 and 116 would adversely impact expanded parachute drop operations which are conducted four nights a week by the Air Force. Link 116 further encroaches on NAF El Centro by interfering with and preventing the anticipated expansion of parachute drop operation near the northern boundary of NAF El Centro.

This Command urges that the environmentally preferred links in the vicinity of NAF El Centro be recommended as the proposed route. Please notify the Intergovernmental Coordination Office of this Command at (415) 877-7574 of any developments to project links that may affect NAF El Centro.

Sincerely,

M. Pearson
M. PEARSON
Director
Installations Planning Division

37 of 86

A [Your comment has been noted and will be considered in the final decision. Neither route utilizes either Link 136 or 116.]

C-4b

State of California

The Resources Agency of California

Memorandum

James A. Burns
Assistant Secretary
Resources Agency

Date:

Telephone: ATSS ()
()

From: California Energy Commission
1111 Howe Avenue
Sacramento, 95825

Subject: APS/SD&E INTERCONNECTION
PROJECT EIS/EIR: SCH 79061204

The staff of the California Energy Commission (CEC) has completed its review of the above subject document. Although we have specific comments on the content of the document, we would like to take this opportunity to explain our analysis supporting the need for this project. In this regard, CEC staff analysis has consistently shown that this project is crucially important to San Diego Gas and Electric (SD&E). In the short-term, it will allow purchases of power to meet load growth, and in the long-term will provide currently non-existent transmission capability for up to 600 MW of Imperial Valley geothermal power to San Diego.

In addition, the Commission's 1979 Biennial Report states, "The state will need additional electrical transmission lines between now and 1991. The most important lines are the link between San Diego and the interconnected systems from Arizona, Mexico, and the Southwest.... The state should support projects which accomplish these objectives and should review their progress when considering proposals for new in-state baseload power plants." The Energy Commission concluded in the 1979 Biennial Report, as required by Public Resources Code Section 25309(c), that "...utility resource plans should include and the state should approve, new transmission interconnections to tap existing resources in preference to new in-state baseload power plants."

Recent CEC staff analysis reaffirms these conclusions. The staff has found that SD&E will need a total of 800 MW of new capacity by 1992. More importantly, "...if interconnection projects and purchases for ... SD&E that now look near success do not work out, this utility will have an additional capacity need of ...555MW." ("Staff response to Committee Order for Hearings on Integrated Electricity Supply and Demand," CEC staff, 9/25/80.) The proposed transmission line interconnection is needed to provide acceptable electric reliability to SD&E. This analysis also shows that loss of this project could cause the SD&E reserve margin to drop to 4.9 percent of peak demand. A reserve margin this low would not provide for a reliable electric supply and would additionally mean that SD&E could not participate in the California Power Pool because of inadequate generating reserves. SD&E would also be forced to run their oil-based generation systems at higher capacity factors, resulting in increased oil consumption and larger air emissions.

C-4b (continued)

James A. Burns
Resources Agency
Page 2

Finally, the interconnection project includes a 161 kV transmission line from the APS/SDG&E 500 kV system to the local Imperial Irrigation District (IID) power network. The IID network now has only a limited interconnection with the California transmission system. The 161 kV line would provide a valuable new link and allow IID to share the benefits of statewide power pooling.

In conclusion, the proposed project is consistent with the Commission's Energy Planning criteria; 1) to meet growth in demand, 2) compensate for old facility retirements, 3) replace power currently transferred from the Pacific Northwest, and 4) displace utility oil and gas use by approximately fifty percent by 1990; and should be approved.

To help clarify the EIS/EIR, we also offer the following specific comments:

1. SDG&E submitted their proposed Common Forecasting Methodology II peak demand forecast instead of the Energy Commission's 1979 adopted forecast, which should have been used. Omission unnecessarily overstates the impact of not building the interconnection project, but does not reduce the critical need for the project. The final EIS/EIR should contain corrected peak demand projections, using the CEC adopted forecast, to more accurately describe the need for the project.

2. The discussion of "Alternative Transmission Line Voltages" on page 3-15, does not mention transmission losses and the rationale for voltage selection. CEC staff feels that the transmission losses must be considered and specifically noted in the project description. Appendix F of CEQA and Section 1502.16(e) of NEPA require that energy conservation opportunities such as measures to reduce transmission losses, be considered in the EIS/EIR. In addition, with the continuing public concern for energy cost and energy conservation, it is reasonable for the public to be reassured that transmission losses are continually reevaluated so that all opportunities for cost-effective energy conservation are realized.

3. Similarly, in Table 3-3, the conductors are delineated as 2156 kcmil, bundled. Transmission losses should be considered in selecting the size and number of conductors and should be specifically noted in the description.

4. The transmission tower drawings, Figures 3-2 and 3-3 are apparently unconvincing. What is the difference between the 50 kV tower shown in Figure 3-2 and the one shown in Figure 3-3? The EIS/EIR should more clearly delineate which drawings are for tangent towers and which are for angle towers.

5. Table 3-7 delineates only construction costs. Estimates of the total project cost should be provided, including the annual costs of transmission losses, operation and maintenance, and interim replacement. Since the construction costs are probably less than fifty percent of the total cost, the total costs should be presented so that the public can be aware of the true cost of this

- A [The CEC's currently adopted BR-III demand-forecast for SDG&E has been incorporated in the SDES.
- B [Consideration of transmission-line losses is only one aspect of line-voltage selection. The primary consideration is power-transfer-capability as discussed on page 3-15 of the DES. Transmission losses are higher at lower voltages for the same transfer. Economic comparison of design alternatives at the preferred voltage included consideration of transmission losses. As discussed on page 5-42 of the DES, transmission losses for the 500kV line are estimated to be 0.1 MW per mile of 1000 MW.
- C [Capital cost of conductors and towers, electrical effects, as well as transmission losses were considered in selecting the size and number of conductors for the proposed Project.
- D [The 500kV tower shown in Figure 3-2 is a typical tangent tower. The 500kV tower shown in Figure 3-3 is a typical dead-end tower.
- E [Total Project cost, excluding annual costs of transmission losses, operation and maintenance, and interim replacements, is given in Table 3-7(R) of the SDES. SDG&E has estimated its annual cost of transmission losses at \$39.7 million, and annual operation and maintenance costs at \$1.4 million. Since long-distance overhead transmission lines have proven to be highly reliable, and outages when they occur are typically of only a few hours duration, interim replacement costs were not considered significant, since the replacement energy may be coal-fired.

C-4b (continued)

ENVIRONMENTAL
IMPACT BRANCH

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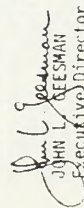
James A. Burns
Resources Agency
Page 3

project. In addition it appears that the cost comparison of alternative routes is also incomplete and, therefore, misleading. As stated under "cost comparison", on page 3-39, "the estimated costs (1980 dollars) are for construction only and do not include costs for acquisition of rights-of-way, ancillary facilities, ad-valorem taxes, mitigation, or allowance for funds used during construction and environmental studies." The cost comparisons should include all significant costs: operation, maintenance, interim replacement, engineering, general overhead, and transmission losses. The transmission losses alone, under heavier loading conditions, could be comparable to the initial construction costs.

6. The discussion of "Energy Requirements and Conservation Potential of Alternatives", should be more definitive. The discussion should include estimates of the indirect or direct energy quantities used so that the reader can judge the significance of the statements made. The reader should be able to have a quantitative indication of what the "significant differences in energy costs" are. Statements, such as, "Other elements, however, such as construction materials, fuels for all project-related activities, construction of additional access roads and line losses would result in significant differences in energy costs" do not reflect the true importance of line losses. Line and transformation losses are probably more than 90 percent of the total project energy usage. The statement, as written, would lead the reader to believe that the other energy quantities are comparable to line losses when indeed they are not. The discussion should specify:

- (1) the direct energy costs per mile;
- (2) the indirect energy costs per mile; and
- (3) a breakdown of the indirect and direct costs (e.g. How much is for materials and construction? How much is for transmission and transformation losses?

Overall, the GEC staff feels that this project is an excellent example of utility planning that will insure a future electricity supply for California consistent with the state's economic and environmental objectives. We endorse this project and encourage its authorization. If you have any questions, please contact David Maul, Senior Environmental Planner, at (916) 920-7525. We appreciate this opportunity to comment on this project.


JOHN L. ALESMAN
Executive Director

F [The annual cost of transmission losses has been provided above. Since feasible alternatives consist of various routing alternatives between PVNGS and Miguel Substation, we believe the discussion of "Energy Requirements and Conservation Potential of Alternatives" on page 5-42 of the DES is sufficient.

C-4d

State of California

The Resources Agency

Memorandum

To : 1. Jim Burns, Projects Coordinator
Resources Agency

Date: October 10, 1980

2. California Public Utilities Commission
350 McAllister Street
San Francisco, CA 94102

From : Department of Fish and Game

Subject: SCH 79061204P - DEIR/EIS for APS/SIX&E Interconnection Project

The Department of Fish and Game has reviewed the subject document and finds it adequate in its general description of biological resources along the 166.2 miles proposed route of the power transmission line within California. We also recognize that information on site-specific environmental impacts has not been presented in this document because the specific alignment of transmission lines and the exact placement of support structures and access roadways has not yet been determined. We therefore believe that a supplemental EIR based on the results of proposals to be developed during the Pre-Construction Ecological Field Review may be necessary to meet CEQA requirements.

We are concerned about the residual impacts of this project on the ecological resources in portions within California. We believe that vigorous implementation of the Generically Committed Mitigation Measures proposed in Table 5-1 will be necessary in order to reduce impacts to the point that residual impacts are no greater than identified in the draft environmental document. We also place great reliance on the ten-point program presented in Table 5-2 of the DEIR for Selectively Committed Mitigation. It has considerable potential for identifying how to fit the transmission lines into the ecological resource areas with minimal residual impacts. In this regard, we request that professional staff of the Department of Fish and Game be given the opportunity to participate in the Pre-Construction Ecological Field Review. Their participation in the review process could be quite helpful in identifying site-specific fish and wildlife problems and also suggesting mitigation measures necessary to offset specific adverse impacts.

Our specific comments on the environmentally preferred route that has been selected for the proposed transmission line within California are the following:

1. The proposed environmentally preferred route passes just south of Interstate 8 near the community of Seelye and would be very close to an important heron and egret rookery. The construction of the transmission line in close proximity to this rookery may increase the chances of bird strikes during their daily feeding movements to and from the agricultural fields.
2. The proposed northerly route to Imperial Valley would pose hazards to waterfowl during their daily movements between the numerous duck clubs in the Salton Sea National Wildlife Refuge and the Imperial Wildlife Area. This

A [We disagree and do not believe that a supplement to the Final EIR to incorporate the results of the preconstruction field review is necessary. Refer to SDES, Table 5-2, Selectively Committed Mitigation, No. 10.

B [We welcome the opportunity to have the Department of Fish and Game participate.

C [Bird strikes crossing the 500kV transmission line are anticipated to be minimal. Potential bird-collision hazard could result from 161kV line as noted in SDES, page 5-13s.

D [The environmentally preferred route is located to the south of these areas where hazards to waterfowl will be minimal.

C-4d (continued)

1. Jim Burns
2. Public Utilities Commission -2-

E collision hazard would also exist with several other migrant birds, including shorebirds, songbirds, raptors, and marshbirds. Additionally, the hazard to birds performing night migrations needs to be evaluated and discussed. Included among these are the Yuma clapper rail and black rails, both of which are listed as rare in California. Yuma clapper rails perform night migrations in the spring from Mexico up the Colorado River and into the Imperial Valley. We believe both of these species could strike the towers and power lines at night.

F In Item No. 5 of Table 5-1 on Generically Committed Mitigation, the document states that where recontouring is required, reseeding or revegetation will occur after the final grade has been established. The proposed route will have impacts on the habitat of several terrestrial species like the desert tortoise, flat-tailed horned lizard, fringe-toed lizard, scarab beetle, bighorn sheep, Yuma clapper rail, and black rail, etc. We recommend that reestablishment of the habitat after grading be done with native plant species selected from the local area of the grading.

G 4. Item No. 3 of Table 5-2 on Selectively Committed Mitigation indicates that special tower design will be utilized to minimize ground disturbance and/or avian conflicts. However, a complete discussion of the system to be implemented and its adequacy is lacking. In view of the collisions expected to occur despite mitigation efforts, we feel this project must include corridor and tower design modifications to provide a more protective concept for birds. Otherwise, a buried-river crossing must be considered if the Colorado River avian collision hazard cannot be abated. Furthermore, under Item No. 8, the document states that "Construction activities will be curtailed during the breeding season to reduce disturbance to sensitive wildlife species". This mitigation clause needs to define particular species and spell out during what part of the year construction activities will be reduced.

Thank you for the opportunity to comment on this environmental document. If you have any questions, please contact Mr. Fred A. Worthley Jr., Regional Manager, Region 5, 350 Golden Shore, Long Beach, CA 90802, telephone (213) 590-5113.

Fred A. Worthley Jr.

FOR Director

E Refer to Response Na. 6. As indicated on pages 6, 8 and 9 of the waterfowl study, crossing the preferred route "is relatively unimportant....There were few individuals recorded and species numbers were low in this area, probably due to the highly channelized nature of the river. Most collisions occur at night during periods of foul weather and/or at dusk and dawn (Thompson, 1978). Extra-high-voltage transmission lines may be less of a problem than smaller distribution lines or telephone/telegraph lines because of their greater size and, therefore, visibility (Thompson, 1978; Scott et al., 1972)." "Nocturnal migrants are probably passing through the lower Colorado River valley at high enough altitudes (except when landing or taking off) that serious conflicts with overhead lines are unlikely." See the biological opinion of USFWS presented in Letter No. B-37s (Table 2-5F).

F We agree.

G Refer to Response Na. 6. Following the year-long study of waterfowl and other bird movements on the Colorado River, it is clear that bird-wire strikes of the preferred crossing below Laguna Dam would be minimal. It is very unlikely that special tower design would have any effect on the number of strikes likely to occur at this crossing. Moreover, sensitive waterfowl/shorebird habitat does not occur at the crossing site--no towers would be constructed in sensitive wetlands at this site.

H It is noteworthy that during hundreds of hours of observation on the Colorado River between Imperial Dam and the International Border, not one bird wire strike was observed, nor was any evidence (e.g., crippled or dead birds) of such strikes found in the vicinity of the many lines presently crossing the river.

H The cost of an underwater crossing of the Colorado River is estimated to be 15 to 18 times that of an overhead crossing using lattice towers. Refer to Response Na. 7.

I Selectively Committed Mitigation Measure Na. 10 of DES, Table 5-2 would accomplish this.

C-5

STATE OF CALIFORNIA--BUSINESS AND TRANSPORTATION AGENCY

DEPARTMENT OF TRANSPORTATION

DIVISION OF AERONAUTICS
1120 "N" STREET
SACRAMENTO, CA 95814
(916) 322-3990

EDMUND G. BROWN JR., Governor



ENVIRONMENTAL
IMPACT BRANCH

SEP 22 1980

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A-59575

September 18, 1980

Mr. Bill Yuen Lee, Project Manager,
Environmental Impact Branch
California Public Utilities Commission
350 Mc Allister Street, Room 1210HP
San Francisco, CA 94102

Dear Mr. Lee:

The California Department of Transportation has completed its review of the Draft EIR/EIS for the Arizona Public Service and San Diego Gas and Electric (APS/SDE) proposed for construction and operation of a 500kv transmission system to interconnect their power systems (SCH 79061204).

Earlier, we have reviewed and commented on a scoping study (7/13/79); continuing environmental studies (10/25/79); International Border Alternative Corridor Study, Environmental Studies Summary, and Mitigation Program (5/07/80). In those earlier comments, we pointed out our concerns related to the transmission corridor segments which would be located in proximity to airports.

The current document is well organized, comprehensive, and thorough, and adequately addresses each of the issues we raised. Our only criticism is related to the color coding for various areas of influence. The color gradations are not sufficiently delineated in some of the charts, and, while the DEIR/EIS cites a number of airstrips which might be impacted by the transmission system, it does not identify just which airstrips or airports would be involved. We did not note any measures proposed to mitigate the project impact on specific airports.

The DEIR/EIS indicates that undergrounding the system, either in part or in total, would not be feasible. We suggest that this might be an appropriate mitigation measure for reconsideration in the vicinity of the few airports which could be impacted. The height of support towers for the conductors is cited as 80 feet to 195 feet with a 127 foot average. We suggest that the towers approximating the 195 foot height should be obstruction marked (painted and/or lighted) as a safety measure.

- A** [We believe the graphic presentations adequately depict the areas requiring delineation and the data is again identified on the inventory tables.
- B** [No FAA airstrips or interference zones would be impacted by the proposed transmission line. However, specific recommended and committed mitigation measure No. 7 on SDES, Table 5-2 would mitigate such impacts.
- C** [Refer to Response No. 7. If a right-of-way is granted, the Applicant will be required to develop a plan acceptable to the Federal Aviation Administration for working the transmission line in aircraft traffic areas, such as near airports and over the Colorado River.


C-5 (continued)

Mr. Bill Yuen Lee
September 19, 1980
Page 2

We would not have discretionary approval authority over the project, nor would there be any involvement of State Aeronautics funds. The documentation is adequate for our purposes. We request the option of reviewing any Final EIR/EIS for this project.

Sincerely,

G. A. MILLER
Acting Chief


Burd Miller
Environmental Planner

C-8



A-59575 ~~144~~ 1642

Department of Planning & Land Use

County of San Diego
County Administration Center
1600 Pacific Highway, Room 207
San Diego, California 92101
Telephone: (714) 236-4597

ENVIRONMENTAL
IMPACT BRANCH
JUL 1 16 1980

October 15, 1980
Paul C. Zucker
Director

Bill Y. Lee
Public Utilities Commission
Utilities Division
350 McAllister Street
San Francisco, CA 94102

IN RE: San Diego Gas & Electric Company (SDG&E)
Eastern Inter-Tie Transmission Corridor

Dear Mr. Lee:

On October 15, 1980 (#9) the San Diego County Board of Supervisors approved the following staff recommendations on the APS/SDG&E Interconnection Project, Draft Environmental Document:

- A [1) Support Link #142 which would take the corridor line north of Jacumba Mountain;
- B [2) Support Link #145 with alternative routing to alleviate negative impacts to residents in the Dulzura area.
- C [In addition, the Board of Supervisors approved a recommendation made by Supervisor Lucille Moore that whenever possible the transmission line should be routed no closer than 1250 ft. from schools, churches and residential/commercial structures.

The Department requests that the above recommendations be included as public comment on the Draft Environmental Document.

The Board also directed the Department of Planning & Land Use to prepare testimony for presentation before the California Public Utilities Commission; thus we request that the CPUC keep our office abreast of the hearing schedule on the proposed transmission corridor.

Sincerely,

Paul C. Zucker
for PAUL C. ZUCKER, Director
Department of Planning & Land Use

PCZ:DB:rw

- A [All preferred routes include Link 142. See Chapter 1, Table 1-I-F in this document.
- B [SDES responds to issue. All preferred routes include a portion of Link 145. See Chapter 1, Table 1-I-F in this document.
- C [Your comment has been noted and will be considered in the final decision.

C-8 enclosure



Department of Planning & Land Use

County of San Diego
County Administration Center
1600 Pacific Highway, Room 207
San Diego, California 92101

Telephone: (714) 236-4597

Paul C. Zucker
Director

September 25, 1980

TO: Board of Supervisors (A45)
FROM: Department of Planning and Land Use (A650) X4597
SUBJECT: San Diego Gas & Electric Co. (SDG&E) Eastern Inter-Tie
Transmission Corridor

On July 30, 1980 (#2) your Board approved in concept the establishment of an energy transmission corridor which would extend from Arizona, through the Imperial Valley and into San Diego County. In addition, you directed staff to examine specific residents' concerns and to report back on the Draft Environmental Impact Statement (DEIS).

We have reviewed the issues addressed by Mr. Sam Dawson of Dulzura (report attached) and have also examined the DEIS on the project. Based on this analysis staff concludes that the concerns raised can be mitigated to the satisfaction of all parties concerned.

The Environmental Impact Report (EIR) has identified link #142 as the environmentally preferred route in the Jacumba region. SDG&E has expressed a willingness to examine alterations in its preferred link #145 to satisfy residents' concerns in the Dulzura area. Since the California Public Utilities Commission (CPUC) has initiated public hearings on the proposed SDG&E transmission corridor and the public comment period expires October 15, 1980, it is my

RECOMMENDATION: That your Board

1. Direct the Department of Planning and Land Use to prepare testimony for presentation before the California Public Utilities Commission;
2. Support alternative route #142 which would take the corridor line north of Jacumba Mountain; and
3. Support an alternative route south of the proposed link #145 to alleviate negative impacts in the Dulzura area.

ON MOTION of Supervisor Moore, seconded by Supervisor Hamilton, the Board of Supervisors, it being understood that wherever possible, routing to be no closer than 1250 feet from centerline of eastern connection to any residences, schools, churches and commercial buildings, took action as recommended,

by following vote:
Ayes: Hamilton, Moore, Hedgecock
Abstain: Bates
Absent: Eckert

SEP 15 1980 No. 9

PORTER D. CREMANS
Clerk of the Board
of Supervisors

Paul C. Zucker
Director

Deputy 46 of 86

D [All preferred routes include Link 142. See Chapter I, Table I-IF in this document.
E [SDES responds to issue. All preferred routes include a portion of Link 145. See Chapter I, Table I-IF in this document.

C-8 enclosure (continued)

Board of Supervisors

-2-

September 25, 1980

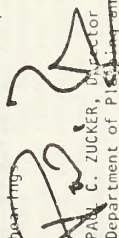
Discussion

The County of San Diego does not have jurisdictional authority over the placement of the transmission line since we are pre-empted by both the CPUC and the Bureau of Land Management (BLM). However, we can intervene in the hearings and recommend modifications to the proposed corridor right-of-way.

The Draft Environmental Impact Statement (DEIS) which was prepared jointly by the CPUC and BLM has identified one preferred link with one alternative in each of the Jacumba and Dulzura regions. In the Jacumba region the environmentally preferred route is link #142 which is approximately 3.5 miles in length and runs to the north of Jacumba Mountain. Although it is slightly more expensive than the utility preferred link #143 (approximately \$158,000), it would reduce visibility impacts on Jacumba residents. In the Dulzura area, the DEIS has identified link #145 as the environmentally/utility preferred route. Link #145 would be approximately 11.7 miles in length and would pass southwest of Potrero Peak, proceeding to the northeast part of Donahue Mountain. This route would have negative impacts on property sites including existing mobilehomes. In discussions with SDG&E representative, Mr. Michael Nigley, it appears that SDG&E is willing to alter route #145 south of the impacted area.

Adoption of the above recommendations would, to a significant degree, alleviate many of the questions raised in Mr. Dawson's report concerning video/audio reception, health and safety implications and visual impacts. However, the Department has concluded that the proposed corridor should not run through BLM land within the Anza-Borrego Desert State Park, since this is a designated wilderness area.

We will continue to keep your Board apprised of the developments in the CPUC


PAUL C. ZUCKER, Director
Department of Planning and Land Use

PCZ:DB:ag

FISCAL IMPACT:

None

CITIZEN COMMITTEE STATEMENT:

N/A

BOARD POLICY APPLICABLE:

None

Reviewed by:	Not needed:
CAO _____	_____
Counsel _____	_____
Auditor _____	_____
OM3 _____	_____
Purchasing _____	_____

F [Neither preferred route crosses this area.

6/12/50
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RECEIVED
OFFICE OF THE
CLERK OF THE
BOARD OF SUPERVISORS

C-11

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ENVIRONMENTAL
IMPACT BRANCH
OCT 16 1980
HKL/BXL



CITY OF CALEXICO

408 Heber Avenue • Calexico, CA 92231 (714) 357-1176

OCTOBER 14, 1980

MR. BILL LEE
PROJECT MANAGER
CALIFORNIA PUBLIC UTILITIES COMMISSION
350 MCALLISTER STREET
SAN FRANCISCO, CA 94102

DEAR MR. LEE:

RE: DRAFT EIR/EIS
INTERCONNECTION PROJECT

FOLLOWING REVIEW OF THE REFERRED DOCUMENT IT WAS REALIZED THAT IT NOT ONLY FAILED TO COMPLY WITH MINIMUM CEQA REQUIREMENTS BUT ALSO NEGLECTED TO ASSESS THE IMPACTS THE INTERCONNECTION PROJECT MAY HAVE ON THE CITY OF CALEXICO. IT APPEARS THAT THE ASSESSMENT WAS LIMITED TO THE AREA OF THE CORRIDOR ON A SHORT TERM BASIS. THE LONG TERM CUMULATIVE IMPACTS, AT LEAST WITH RESPECT TO OUR COMMUNITY, WERE TOTALLY EXCLUDED.

IF YOU TAKE IN CONSIDERATION THAT THE CITY'S GROWTH IS ALREADY RESTRICTED, TO THE SOUTH BY THE INTERNATIONAL BOUNDARY AND TO THE WEST BY THE ALL AMERICAN CANAL AND NEW RIVER. YOU WOULD REALIZE THAT THE "PREFERRED" ROUTE WILL ORASTICALLY IMPACT NOT ONLY CALEXICO BUT ALSO THE TOWN OF HEBER.

OUR IDENTIFICATION OF THE PROJECT'S IMPACT WAS BASED ON THE FOLLOWING:

1. THE 50 YEARS LIFE SPAN OF THE PROJECT'S PREFERRED ROUTE
2. THE EDGE OF THE PREFERRED ROUTE IS LESS THAN TWO MILES AWAY FROM THE CITY OF CALEXICO.
3. THE GEOGRAPHICAL LOCATION OF THE CITY OF CALEXICO AND ITS PRESENT GROWTH RESTRICTING CONDITIONS
4. THE CITY OF CALEXICO IS THE FASTEST GROWING COMMUNITY IN IMPERIAL COUNTY. FROM 1970 TO 1980 THE POPULATION INCREASED OVER 27% AND PRESENT TRENDS INDICATE THAT THIS RATE OF GROWTH CAN CONTINUE
5. THE CITY'S RESIDENTIAL VACANCY RATE IS LESS THAN ONE PERCENT
6. THE IMPERIAL VALLEY COORDINATED HOUSING AUTHORITIES HAVE A LIST WITH THE NAMES OF OVER 600 FAMILIES WANTING TO RESIDE IN CALEXICO.

C-11 (continued)

MR. BILL LEE

OCTOBER 14, 1980
PAGE TWO

7. THE CALEXICO PLANNING DEPARTMENT HAS GATHERED A LIST WITH THE NAMES OF OVER 1,500 FAMILIES WANTING TO OBTAIN A RESIDENTIAL UNIT ON THE CITY'S LAND WRITE DOWN PROGRAM
8. IT IS STATED ON PAGE 3-22 OF THE ENVIRONMENTAL DOCUMENT THAT AFTER THE TRANSMISSION LINE IS ENERGIZED ONLY COMPATIBLE LAND USES WILL BE PERMITTED. THESE INCLUDE AGRICULTURAL, EQUESTRIAN AND HIKING TRAILS, GREEN BELT AREAS, GOLF COURSES AND PARKS, PARKS AND RECREATIONAL AREAS WE HAVE, WHAT WE NEED IS LAND TO SATISFY THE BASIC NEEDS OF THE COMMUNITY, LAND FOR RESIDENTIAL, COMMERCIAL AND INDUSTRIAL DEVELOPMENT.

A [THESE ARE OUR CONCERNS, AND THEY WERE NEGLECTED WITHIN THE CONTENTS OF THE DOCUMENTS. IT APPEARS THAT THE ONLY FACTOR USED IN THE PRIORITIZATION OF THE CORRIDORS WAS ECONOMICS AND THAT THE EIR/EIS WAS TRYING TO JUSTIFY A PRESELECTED ROUTE. BUT THE INADEQUACY OF THE DOCUMENT DOES NOT STOP HERE. THE FORMAT USED TO GENERATE THE ANALYSIS HAS DISCREPANCIES WITH RESPECT TO THE GUIDELINES FOR IMPLEMENTATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT, TITLE 14 DIVISION 6 OF THE CALIFORNIA ADMINISTRATIVE CODE.

THE DISCREPANCIES INCLUDE AND ARE NOT LIMITED TO THE FOLLOWING:

SECTION 15140

B [THIS SECTION REQUIRES THAT EACH EIR CONTAIN A BRIEF SUMMARY OF THE PROPOSED ACTION AND ITS CONSEQUENCES IN LANGUAGE SUFFICIENTLY SIMPLE THAT THE ISSUES CAN BE UNDERSTOOD BY THE AVERAGE MEMBER OF THE LAY PUBLIC. THE REFERRED DOCUMENT NOT ONLY DOES NOT HAVE THE SIMPLE LANGUAGE (THERE ARE 14 PAGES OF ABBREVIATIONS) BUT IT FAILS TO PROVIDE THE PROPER DESCRIPTION OF THE PROPOSED PROJECT, THE WIDTH OF THE CORRIDORS OR THE CRITERIA FOR PRIORITIZATION IS VAGUE. THE SUMMARY DOES NOT PROVIDE ANY TECHNICAL DATA, MAP, PLDT PLANS, DIAGRAMS AND/OR OTHER RELEVANT INFORMATION THAT WOULD PERMIT FULL ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL IMPACTS. (IT APPEARS THE DOCUMENT ONLY ASSESSED THE IMPACTS OF THE ENVIRONMENT ON THE PROJECT).

C [FURTHERMORE, THE SOCID ECONOMIC IMPACT ANALYSIS, ADDRESSED ONLY THE POTENTIAL POSITIVE AND NEGATIVE CONSTRUCTION WORKER, EXPENDITURE AND FISCAL EFFECTS THAT WOULD RESULT FROM THE CONSTRUCTION OF THE PROPOSED FACILITY AND NOT HOW 14,000 + PERSONS WOULD BE AFFECTED IN THE NEXT 50 YEARS. THE ONLY OTHER IMPACT CONSIDERED WAS A VISUAL IMPACT.

SECTION 15141

D [THIS SECTION REQUIRES THAT THE DOCUMENT CONTAINS THE PRECISE LOCATION AND BOUNDARIES OF THE PROJECT. THE EIR/EIS FAILS TO PROVIDE THIS INFORMATION. IN ADDITION OF NOT HAVING ADEQUATE SCALE MAPS TO DETERMINE THE DISTANCES AND, CONSEQUENTLY, THE IMPACTS OF THE PROJECT. THERE ARE 230KV AND 161KV LINES THAT ARE NOT PROPERLY DESCRIBED AND ARE PART OF THE PROPOSED ACTION.

A [We believe the document is adequate and complete and totally responds to CEQA. Furthermore, the proposed route is the result of environmental studies presented in the APS/SDG&E Interconnection Project Environmental Study, Phase I and Phase II Corridor Studies. The route was not preselected. See response attachment to Letter No. B-3.

B [We disagree. See attachment of Letter No. B-3.

C [Refer to Response No. 3.

D [Refer to Response No. 11. In addition, we believe the 230kV and 161kV transmission lines are adequately addressed in the DES and SDES.

C-11 (continued)

MR. BILL LEE
OCTOBER 14, 1980
PAGE THREE

THEREFORE, WE CAN NOT ASSESS THE PROJECT WITH RESPECT TO THE CITY
OF CALEXICO AND THE TOWN OF HEBER.

SECTION 15142

E [THIS SECTION REQUIRES THAT ALL EIR'S INCLUDE A DESCRIPTION OF THE
ENVIRONMENTAL IN THE VICINITY OF THE PROJECT, AS IT EXISTS BEFORE
COMMENCEMENT OF THE PROJECT, FORM BOTH A LOCAL AND REGIONAL PERS-
PECTIVE.]

F [SECTION 4 OF THE DOCUMENT CONSISTS OF ONLY MAPS THAT ASSESS THE
SECTION OF THE CORRIDOR. THE AREA ADJACENT WERE IGNORED COMPLETELY.
THIS IS SPECIALLY TRUE FOR THE COMMUNITIES OF CALEXICO AND HEBER.
THEY WILL BE THE MOST AFFECTED BY THE PREFERRED ROUTE AND NOTHING
WAS SAID AS OF HOW THE CORRIDOR WOULD AFFECT THE POTENTIAL GROWTH
OF THE COMMUNITIES.]

THE EXCLUSION OF THESE TWO COMMUNITIES FROM THE ENVIRONMENTAL SETTING
WILL MAKE IT VERY DIFFICULT FOR THE READER OF THE DOCUMENT TO RELATE
TO THE POTENTIAL LONG RANGE IMPACT THE PROJECT MAY HAVE ON US.

SECTION 15149

G [THIS SECTION REQUIRES THAT WHERE A PART OF ANOTHER DOCUMENT IS INCOR-
PORATED BY REFERENCES, SUCH OTHER DOCUMENT SHALL BE MADE AVAILABLE
TO THE PUBLIC FOR INSPECTION AT A PUBLIC BUILDING. THE EIR/EIS MAKE
REFERENCES TO DOCUMENTS AND OTHER STUDIES THAT ARE OVER 10 YEARS OLD
WITHOUT INDICATING WHERE THOSE DOCUMENTS ARE AVAILABLE. IT SHOULD
BE POINTED OUT THAT OUR CONCERNS ARE ONLY ADDITIONS TO THE TESTIMONY
GIVEN BY THE COUNTY OF IMPERIAL, THE GENERAL PUBLIC AND OTHER
ORGANIZATIONS ON OCTOBER 6, 1980, AND THAT THEY SHOULD NOT BE ADDRESSED
SEPARATELY. EVEN THOUGH OUR COMMENTS COVERED ONLY AREAS THAT AFFECTED
THE CITY OF CALEXICO. THEY CAN BE EQUALLY APPLIED TO OTHER SECTIONS.]

IN SUMMARY, THE EIR/EIS IS A DOCUMENT WHICH WILL BE THE BASIS FOR A
DECISION THAT MAY IMPACT THE CITY OF CALEXICO FOR MORE THAN THE NEXT
50 YEARS. THEREFORE, IT SHOULD NOT BE USED AS PRESENTED. IT SHOULD
BE MODIFIED TO INCLUDE, IN THE VERY MINIMUM, ALL INFORMATION REQUIRED
BY STATE LAW AND THE REAL IMPACTS OF THE DOCUMENT.

ATENTAMENTE.

Miguel B. Sanchez
MIGUEL B. SANCHEZ
PLANNING DIRECTOR

MBS:ML CC: MR. WILLIAM J. HASTER
PUBLIC UTILITIES COMMISSION
REPORTING BRANCH

STATE CLARINGHOUSE
OFFICE OF PLANNING &
RESEARCH
STATE OF CALIFORNIA

E [Refer to Response No. 11.]

F [The preferred route is one mile south of the town of Heber and one-and-one-half miles
north of the incorporated boundary of Calexico. No growth impact to these communities is
anticipated. Refer to Responses Nos. 3 and 11.]

G [The documents were made available of the BLM office.]

C-12



San Diego Gas & Electric

KUL/BVL
A-59573-
ENVIRONMENTAL
IMPACT BRANCH
6/1 - 6 1980

October 14, 1980

PMC 120
B781

Mr. Bill Y. Lee
State of California
Public Utilities Commission
Fox Plaza
1300 Market Street
San Francisco, CA 94102

Mr. S. Wagner
U.S. Department of the Interior
Bureau of Land Management
Arizona State Office
2400 Valley Bank Center
Phoenix, AZ 85073

Dear Messrs. Lee and Wagner:

Following are San Diego Gas & Electric's comments on the APS/SDG&E Interconnection Project, Draft Environmental Document (EIS/EIR).

- | | | | |
|---|--|---|---|
| A | <p>1) Table 3-3 should be revised for the 230 kV lines to show the magnetic field at the edge of ROW as 0.08 gauss.</p> <p>2) On Table 3-9, page 4 of 5, Set VIII, Routes 1 and 2, Social and Economic Land Uses add: "Crosses Indian Reservation".</p> <p>3) At the top of page 5-7 potential high initial soil erosion impacts are cited along Connectors K (4.7 miles) and L (0.5 miles), and Set XII - Routes 1 (3.0 miles) and 2 (4.5 miles). These impacts do not agree with those cited in Table 4-2, page 2 of 2. The text and table should be reconciled.</p> <p>4) On page 5-36, the paragraph discussing "Electric Fields" reads in part "The maximum desired ground level field strength ...". This part should read "The maximum designed ground level field strength..." (emphasis added).</p> <p>5) At the top of page 5-37, and again in paragraph 4, reference is made to California Public Utilities Commission General Order No. 95 as the source for the</p> | B | <p>Subsequently recalculated by SDG&E to be 0.11 gauss and is included in Chapter 3 of the FES.</p> <p>These comments are included in Chapter 3 of this document.</p> |
|---|--|---|---|

C-12 (continued)

Messrs. Lee and Wagner

-2-

October 14, 1980

5 milliamp short-circuit current design limitation. This reference should be deleted since G.O.95 contains no short circuit current standard. This standard is contained in the National Electric Code.

- 6) Appendix E, page E-5, Section 2.3.2.2 FM Radio Interference, paragraph 2, line 3 refers to "Figure 2.3.2C". This reference should be "Figure 2.3.3C" (emphasis added).

Should you have any questions, please do not hesitate to contact me at (714) 235-7775.

Sincerely,



Michael W. Danna
Senior Engineer
Licensing & Environmental
Department

MWD/bgc

cc: JMBurns
MRNiggli
MWPuette
MEWurbs, APS

C-43

A-59575

AKR/BYL

BOX 364, BRAWLEY, CALIF. 92227
10-11-80

ENVIRONMENTAL
IMPACT BRANCH

UCL 14 1980

BILL Y. LEE
PROJECT MANAGER
350 MCALLISTER ST.
ROOM 5060
SACRAMENTO, CALIF.
DEAR MR. LEE:

A [REGARDING THE PALO VERDE NUCLEAR GENERATING STATION TRANSMISSION LINES TO THE DEVERS SUBSTATION NEAR PALM SPRINGS AND THE LINE TO THE MIGUEL SUBSTATION NEAR SAN DIEGO:

B [WHO AUTHORIZED THESE TRANSMISSION LINES TO BE BUILT?

C [WHO AUTHORIZED THE PALO VERDE NUCLEAR GENERATING STATION TO BE BUILT? WHAT EFFORTS HAVE BEEN MADE TO CONSERVE ELECTRICAL ENERGY THAT IS NOW BEING WASTED? (MANY REPORTS STATE THAT 70% OF ALL ELECTRICAL POWER IS NOW BEING TOTALLY WASTED).

IT SEEMS YOU HAVE TAKEN A LOT FOR GRANTED BY ASSUMING YOU CAN TRESPASS ON PEOPLE'S PROPERTIES WITH APPARENTLY UNNECESSARY POWER TRANSMISSION LINES IN ANY DIRECTION YOU CARE TO GO WITHOUT ANY REGARD TO ANY REAL NEED FOR THESE TRANSMISSION LINES.

I AM SENDING A COPY OF THIS LETTER TO GOVERNOR BROWN ALSO:

RESPECTFULLY, E.O. PRIDDY

A [The proposed transmission line of the APS/SDG&E Interconnection Project is not routed to Devers Substation. Refer to DES or SDES, Chapter 1.

B [The transmission lines have not been authorized. Refer to SDES, Chapter 1.

C [The Nuclear Regulatory Commission.

D [Refer to SDES, Chapter 3.

C-47

RVK/BL
A 59575

ENVIRONMENTAL
IMPACT BRANCH
OCT 13 1980

October 13, 1980

Mr. Bill Y. Lee
Public Utilities Commission
Utilities Division
350 McAllister St.
San Francisco CA 94102

Dear Mr. Lee:

Reference: Eastern Interconnection Application 59575

As an expert witness, I expect to testify at some time after the hearings reconvene on November 24, at which time I will speak in several specific subject areas. The purpose of this letter is to summarize my feelings and those feelings of the "Committee to Relocate Unwanted Power Towers" prior to the October 15 deadline.

A meeting was held this weekend and the president, Mrs. Deanna Solomonsen, has authorized me to be the spokesperson for the future hearings.

Summarizing the feelings of this committee, I wish to present the following facts:

- (1) For health, visual, sound and other reasons, it is unanimous that we desire the EI to be as far from our residences, etc. as possible.
- (2) The Electric Branch Report indicates that the decision to construct the EI might be postponed a few years, perhaps up to 4 years.
- (3) The citizens who live in the Tecate/Barrett/Dulzura area have selected this location for their homes and life-style because they enjoy the rural setting which is less tampered by civilization than urban areas. Certainly an example of this is three distinctly separated property owners who live in well constructed homes without any electricity. These three individuals are not impoverished and unable to afford electricity. One, Mr. Kirkpatrick, who I mentioned during the October 10 hearing, is a retired Sea Captain, another is a Reporter for the Evening Tribune Newspaper, and another is the Director of Plant Engineering and Facilities for General Dynamics, Electronics Division. The beauty and our love of our rural life-style was well vocalized during the public hearing on October 7. In order to visually help you see the beauty of this area, I am enclosing a copy of the June 1980 San Diego Home/Garden magazine which shows a view of my residence on page 35. In this picture, you can

A [

B [

A [Refer to DES, Appendix E, and Response No. 1.

B [No decision has been rendered at this time. Refer to the cover letter of this document.

C-47 (continued)

October 13, 1980

Page 2

Mr. Bill Y. Lee

- C [easily see how the beautiful valley would be visually damaged by the construction of over 100-foot high utility poles. Within the presently proposed Link 145, approximately 3 poles would be added to this picture. (I would hope that you would read the entire article and see where it is reported that I personally am concerned about the dilemma that utility companies face relative to their peak power requirements.)
- D [(4) The SDG&E Company appears unwilling to define the location of this line as their responsibility. This fact certainly makes it difficult for a property owner to speak to one individual at the company and receive satisfaction. SDG&E has clearly made it the PUC's responsibility to protect individuals. The only recourse for an individual is through the courts. Even a petition signed by 340 residents drew no response, and Mr. Gabrielson stated that he was unaware of it.
- E [(5) Only one person from Dulzura attended the scoping meetings, and evidently this person did not disseminate the information to other property owners in the Tecate/Barrett/Dulzura area. Everyone that I have discussed this matter with was unaware of the scoping meetings, consequently our ability to input our ideas prior to the IE presently conducted hearings did not exist.
- F [(6) Noise information appears to be somewhat conflicting. Although the draft document speaks of noise reaching an ambient level at 1250 feet to 27 dBA, another document provided to me by SDG&E, at the October 10 hearing, shows that during foul weather, the noise is approximately 43 dBA at 2000 feet. I expect expert testimony to reveal that the ambient noise level in our rural settings is a lower figure than reported in the draft document. As I spoke on October 7, I believe it is very important that the noise of the line be compared to the minimum ambient level rather than an average ambient level. The reason for this is obvious that the line could be heard when other ambient noises are at their minimum level.
- G [(7) Health Hazards are inconclusive.
- Because of these factual considerations, I have several specific recommendations:
- (1) The decision to construct the EI should be postponed for a period up to 4 years to allow a continuous monitoring of the need.

C [We agree that visual impacts would be significant.

D [Refer to Response No. 11.

E [We believe the figures presented in the DES correctly and adequately address audible noise within the Project area.

F [Refer to DES, Appendix E, and Response No. 1.

G [No decision has been rendered at this time.

C-47 (continued)

October 13, 1980

Page 3

Mr. Bill Y. Lee

H [(2) The CFM III should be continuously updated every 6 months to correct any forecasting errors and more accurately predict the future electric needs.

I [(3) Improved methods of conservation and the possibility of other means of electrical generation break-throughs should be monitored by the PUC with the hope in mind that the San Diego area could be dependent largely upon its own generated electricity rather than electricity generated a great distance away such as Arizona or New Mexico.

J [(4) During this period of delay, SDG&E should propose and request an act of Congress allowing the EI to be placed through the BLM Wilderness Preserve in close proximity to the Mexican border in place of Links 145, 146, 147, 148, 149 and 150.

K [(5) Should the EI be placed closer than 1250 feet to a residence, at the option of the property owner the utility should be required to purchase the property at a premium price of approximately 25% above market value. Upon transfer of ownership to the utility, the utility would then demolish any real estate improvements on the property. For that distance from 1250 feet to one mile, the utility at the option of the property owner would be required to purchase the property at a premium percentage above market value. For these distances, the utility would then be allowed to resell the property making certain that any future property owner was aware of the full implications of the 500 KV line.

L [(6) During the period of delay in authorizing the applicant to construct the EI, the PUC should conduct independent studies of current developments relative to potential health hazards of this as well as other types of high voltage lines which may be required in other areas of the state.

Thank you very much for the opportunity to input into your decision-making process. This is the first time I have ever been personally involved in a political process other than voting. Please excuse any personal deficiencies that I may have exhibited due to my inexperience in this and the legal area.

Very truly yours,

Sam Dawson

Sam Dawson
1155 Barrett Lake Road
Dulzura CA 92017

pw

cc: Mr. Stan Wagner
Judge Doran

H [We don't believe the suggestion has merit. The primary purpose of the Project is for oil displacement. Continuous updating of forecasts may alter the amount of oil displacement but not the need for the Project. See SDES, Chapter I.

I [One of the factors of the California Energy Commission's Biannual Report is to monitor and adopt cost-effective energy conservation, alternative energy resource development and other opportunities.

J [Congressional action on such a request by SDG&E within the time-frame of SDES and FES preparation is highly unlikely. Discussion of such an alternative, the Otay International Border Alternative Corridor, is contained in the SDES, Appendix G, and Feasibility/Suitability Studies Addendum. Potential wilderness areas must be managed by BLM so as to preserve wilderness values until Congress acts.

K [Regarding the 1250-foot buffer zone, see response to similar comment presented in Letter No. C-32 (Table 2-1F). Refer also to Response No. 2.

L [No decision has been rendered at present.

C-49

MICHAEL CHRISTOPHER SPATA
ATTORNEY AT LAW

A-59575 *HLK/BLK*
ENVIRONMENTAL
IMPACT
STATE AGENCY
OCT 16 1980

1007 FIFTH AVENUE - SUITE 506 - SAN DIEGO, CALIFORNIA 92101
(714) 232-6291

October 14, 1980

Bill Y. Lee, Project Manager
California Public Utilities Commission
Utilities Division
350 McAllister Street
San Francisco, CA 94102

Re: APS/SDG&E Interconnection
Project
Application No.: 59575

Dear Mr. Lee:

Enclosed please find the original of the Comments of
United Enterprises, Inc., to the Draft Environmental Docu-
ment for the APS/SDG&E Interconnection Project.

In accordance with our conversation of Friday, Octo-
ber 10, 1980, the California Public Utilities Commission will
review and respond to the Comments to the above-mentioned
Draft Environmental Document so long as the Comments are
"post-marked" by Wednesday, October 15, 1980.

Thank you for your continued courtesy and cooperation.

Very truly yours,

Michael Christopher Spata
Michael Christopher Spata

MCS/gg

Enclosure

cc: Rose B. Patek, President, United Enterprises, Inc.
Patrick J. Patek, Vice President, United Enterprises, Inc.
Steven A. Weissman, Attorney, CPUC
Manning W. Puette, Attorney, SDG&E
All Interested Parties
Hon. John J. Doran, Administrative Law Judge

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

C-49 (continued)

SDG&E Application #59575

INTRODUCTION

In view of the fact that the proposed 500 KV Transmission Line project will create a substantial impact on the environment, thereby warranting compliance with federal and state environmental laws, and in view of the fact that the location of the proposed project will substantially affect property owned by United Enterprises, Inc., (hereinafter "United Enterprises"), the following Comments are submitted for review and response by the appropriate parties connected with this project.

1. ELECTRIC FIELDS. (5-36/5-38)

A. Instantaneous Ignition of Fuel.

Page 5-37 of the Instant Draft Environmental Document states that:

"Under specific conditions with regard to insulation, placement of vehicle, fuel/air mixture, and insulation of the individual during refueling, a spark discharge might result in the ignition of fuel during refueling. The numerous conditions that must be met simultaneously in order for this event to occur minimizes the probability of its happening. There have been no reports of accidents of this type. The instantaneous ignition of fuel under a transmission line during refueling of a vehicle is a remote possibility."

In view of the foregoing, it is necessary and proper to ascertain the following information:

- (1) What are the precise conditions under which the ignition of fuel during refueling will result?
- (2) Is it acceptable policy to authorize a potentially dangerous project simply because there have been no reports of this kind of accident? At the very least, appropriate warning

A [Although the ignition of fuel during refueling under the transmission line is theoretically possible, BLM and CPUC are not aware of any confirmed cases of fuel ignition caused by the operation of transmission lines. The possibility of fuel ignition is discussed in Appendix E of the DES.]

C-49 (continued)

SDG&E Application #59575

signs must be posted in and around the area where the transmission line is proposed to be located.

B. Inducement of Voltage Onto Appurtenances.

Page 5-37 and 5-38 of the instant Draft Environmental Document indicate that:

"The magnetic field can induce voltage onto parallel fences, pipelines, rails, overhead communications circuits and other electric lines. The induced voltage will be greatest when any of the aforementioned parallel the transmission line for a great distance. The amount of voltage induced can range from zero voltage to hazardous potential if not properly mitigated."

"Problems that can arise include interference with railroad signal systems, potential shock to personnel working on pipelines not properly grounded, corrosion of pipelines, and interference with the operation of other parallel transmission lines and related equipment. Analytical methods for the prediction and mitigation of these induced voltages exist within the utility industry and would be applied by the Applicants, as necessary, to the satisfaction of affected utilities and individuals."

In the San Miguel Mountain area of San Diego County, the Otay Municipal Water District (OMWD) is undertaking to construct, maintain and operate a massive Wastewater Reclamation Facility. Appropriate mitigating measures must be brought to the attention of OMWD because the project may very well have an adverse impact upon this reclamation facility and its appurtenances.

Additionally, United Enterprises maintains metal fencing and operates farm equipment and machinery in the area where the proposed project will be located. Consequently, United Enterprises requests that appropriate information be furnished concerning the necessary mitigating measures which must be

B [No impacts to OMWD facilities are anticipated.

C [The Applicant will ground all metal fences as necessary in accordance with Generically Committed Mitigation Measure No. 13 listed in Table 5-1 of the SDES.

C-49 (continued)

SDG&E Application #59575

implemented to guard against hazards to metal fencing and farm equipment and machinery.

C. Biological Effects of Project.

Page 5-38 of the instant Draft Environmental Document unfolds that:

"The possibility of health and biological hazards from electric fields is of public concern. A large number of research projects, articles, reports, and books that address the biological effects of power-frequency electric fields were initiated or published during the 1970s. Of the vast number of publications and research programs, only a small percentage have reported that effects were observed. Most of the studies or experiments that indicate biological effects have been criticized for a number of reasons, including deficiencies in experimental procedures, lack of controls, and the inability of particular conditions and results to be duplicated. The results of studies reported to date are inconclusive in establishing significant biological effects from electrical fields under transmission lines. On the other hand, it has not been clearly demonstrated that biological effects, especially from long-term exposure, do not occur." (Emphasis added)

Notwithstanding the testimony of Dr. Solomon Michaelson -- the witness supplied by applicant -- that there are no harmful effects on the biological environment arising out of the operation of high voltage transmission lines, the Draft Environmental Document contends that present scientific studies are "inconclusive" in establishing significant biological effects from electrical fields under transmission lines.

Therefore, because of the variance between applicant's expert witness and the Draft Environmental Document, it is recommended that:

- (1) Further biological studies must be sponsored and conducted so as to "conclusively" establish whether deleterious environmental damage will be caused by high voltage transmission lines.

D [Refer to DES, Appendix E, and Response No. 1.

C-49 (continued)

SDG&E Application #59575

E

(2) A fund should be established from the profits of the applicant to subvene the cost of such further biological studies. Guidance can be ascertained from the New York State Public Service Commission's Order relative to the 765 KV Transmission Line Project spearheaded by Rochester Gas & Electric and Niagara Mohawk in 1976.

F

(3) Additional clarification should be provided concerning whether any building setbacks will be required for future development. By way of background, it should be noted that on page IV-6 of the Draft Environmental Impact Statement for SDG&E's application No. 59172 for a 230 KV International Transmission Line from San Diego County, California to Tijuana, Mexico, it was indicated that:

"Recent reviews of the literature in this field have concluded that the bulk of the evidence indicates no significant biological hazards to humans or animals from the low-level electromagnetic fields adjacent to transmission lines (Bridges, 1975; EPRI, 1979). If additional studies should demonstrate potentially harmful effects from long-term exposure to transmission line electromagnetic fields, it would be possible to require an appropriate building setback for any future residential development." (Emphasis added)

However, the instant Draft Environmental Document does not broach the issue of whether an appropriate building setback will be required for future development if additional studies disclose that harmful effects will arise from extensive exposure to high voltage transmission line electromagnetic fields.

Therefore, response should be provided regarding whether: (i) a setback will be required and (ii) what will be the procedure to guarantee that diverse governmental entities will impose such a setback restriction.

2. ACCESS ROAD SECURITY. (3-15/3-16)

United Enterprises encounters substantial interference with the use and enjoyment of its property arising out of abusively

G

[Access road security is an item which is negotiable between the landowner and utility. In specific locations and with landowner consent, the roads may be closed to protect specific resource values or because of hazards.

C-49 (continued)

SDG&E Application #59575

inordinate trespassing and vandalism. It is certain that present trespassing onto, and vandalism of, its property will continue, and very likely proliferate, because of the construction and/or improvement of access service roads for the instant project. Accordingly, it is imperative that applicant undertake effective security measures so as to thwart the interference with, and damage to, property stemming from the likely increase of trespassing onto, and vandalism of, the property of United Enterprises.

Moreover, San Diego governmental authorities will be permitting hunting and shooting in this area; and as such, a critical question arises as to what steps will be taken by applicant to protect the transmission lines and towers from reckless individuals who will use the transmission lines and towers for target practice, thereby enhancing the danger to the environment.

3. UNDERGROUND CONSTRUCTION OF TRANSMISSION LINE.
(3-15/3-16)

Page 3-16 of the instant Draft Environmental Impact Document reveals that:

"At the present time, while it is technically feasible to install 500kV ac underground transmission lines, few have been installed in the United States, and no long-distance pipe-type cable transmission systems are known to be in operation..."

"The principal environmental benefits of undergrounding a transmission system involve elimination of adverse visual and aesthetic impacts; however, on balance, the environmental benefits of undergrounding do not appear to outweigh the adverse impacts."

"Considering the technical complications, economic and environmental costs, and accessibility, an underground ac system - either in part or in total - is not a viable alternative..."

It is submitted that inadequate study has been devoted to the underground construction alternative, especially for the

H [Refer to Response No. 7.

C-49 (continued)

SDG&E Application #59575

approach of partially locating the transmission line underground and aboveground. More effective balancing should be considered because it appears to be technically feasible to install 500kV transmission lines underground.

4. EARTHQUAKES, BRUSHFIRES AND FLOODING.

United Enterprises desires clarification regarding the likelihood of brushfires arising out of possible earthquakes which may cause the transmission lines to break and make contact with the ground. The property where the applicant intends to locate the transmission line in highly vulnerable to brushfires. Furthermore, what mitigating measures will be taken to protect against brushfires caused by the malfunctioning of the transmission line? Finally, what protective measures will be taken to prevent damage and/or destruction to the transmission lines and towers caused by major flooding which is endemic to the area?

CONCLUSION

United Enterprises has substantially participated, and will continue to participate, in the public hearings before the California Public Utilities Commission relating to the instant project. Nevertheless, United Enterprises respectfully submits the foregoing comments for thoughtful review and response by the appropriate parties connected with this project.

Dated: October 14, 1980.

Respectfully submitted,

Michael Christopher Spata
Michael Christopher Spata
Attorney at Law for
United Enterprises, Inc.

I [The San Diego Ranger Unit of the California Department of Forestry has not experienced a fire problem caused by high-voltage transmission lines. The Boise Interagency Fire Center has no records of a fire caused by high-voltage transmission lines (personal communication, Bill Lyons, 7/30/81). In addition, see DES, page 3-21.

J [Tower sites will be located to span areas of potential floods and avoid existing fault scarps or known faults.

C-51

KAC/B
A-59575

ENVIRONMENTAL
IMPACT BRANCH
OCT 17 1980

P.O. Box 20543
El Cajon, CA 92021
14 October 1980

Mr. Bill Y. Lee, Project Manager
California Public Utilities Commission
350 McAllister Street
San Francisco, CA 94102

Dear Mr. Lee:

This letter is in response to your request for comments on the adequacy, completeness and accuracy of the draft environmental document prepared for the proposed APS/SDG&E Interconnection Project.

A [A careful reading of this document has convinced me that it does not adequately "disclose in advance the probable environmental impacts of the proposed action and alternatives." Therefore, this document fails in its stated purpose to "assure that the decision-making process considers the environmental as well as economic, technical and other factors," at least with the perspective and accuracy necessary to protect the public interest.

B [I am enclosing a copy of a letter dated July 27, 1979, originating from the Arizona state office of the Bureau of Land Management (Enclosure 1). This letter states that "the environmental document will address all of the issues raised in the scoping process," and it includes summaries of the scoping meetings plus a summarized list of the issues and concerns expressed in letters sent to the BLM & PUC during the scoping process.

I am also enclosing a letter dated 17 July, 1979, written by me to provide public input concerning the scoping process and the scope-to-be of the environmental document for this APS/SDG&E Interconnection Project (Enclosure 2).

A comparison of the scope of the issues raised in the scoping process to the scope of the issues treated in the draft EIS/EIR demonstrates the inadequate and incomplete nature of this document. My most serious criticisms are primarily generic rather than specific, and pertain to vast areas of omission in which the draft EIS/EIR simply does not contain sufficient information to address the full scope of analysis requested by the public, and deserved by the public. This is shown in the following comments concerning the scope of the issues demonstrated in my enclosures:

"3. Electrical effects on health, electronic devices and communicating systems." (Enclosure 1, page 6)

C [My comments: The scope of the consideration of biological, safety and health effects in this draft EIS/EIR is wholly inadequate, because it does not encompass the relevant body of known and available information on the subject. Omission is made of highly credible information concerning potential biological and health effects, and the EIS/EIR will be incomplete if this information is not included.

A [We disagree. See response attachment to Letter No. B-3.

B [The environmental documents address all of the issues raised during the scoping process.

C [We believe the environmental document encompasses the available literature pertinent to evaluating this Project. We believe that including the prepared testimony of Dr. Marino is unnecessary and that the electrical effects report in the DES and Response No. 1 encompassed the position of Dr. Marino.

C-51 (continued)

Mr. Bill Y. Lee

Page 2

I suggest that the Final EIS/EIR contain, as an appendix, the prepared testimony of Dr. Andrew Marino (pages 8960 to 9020, inclusive) given at an Evidentiary Hearing before a committee of the California Energy Commission on August 14, 1980 (Docket No. 79-AFC-5). If this is impossible, then I request some other format be found to include in the Final EIS/EIR the factual substance included in Dr. Marino's testimony referred to above.

The demonstrable biological effects of ELF electric fields and the lack of knowledge about long range, cumulative or synergistic effects of chronic, low-rate exposure to these fields on humans or other living organisms constitute a rational basis for concern about possible adverse biological and health effects. Considering the unexamined, but finite, potential for adverse impacts on the public health and environment, it surprises me that no attempt has been made to assess either the probability of this risk, or the impacts that could occur in the worst case situation (i.e., long term biological effects ultimately do result in serious adverse health and ecological impacts). Exactly what would be the extent of SDG&E's liability, should future pathological conditions be linked to the operation of the APS/SDG&E Interconnection? I believe these matters must be addressed in the Final EIS/EIR, as it is contrary to the public interest to permit such omissions.

"6. Growth inducement impacts and effects on critical water in San Diego." (Enclosure 1, page 6)

"11. Growth inducing impacts of additional power was a concern as well as the treatment of other limits to population growth, i.e., water was mentioned." (Enclosure 1, page 4)

"Future water availability is a definite limit to growth in the San Diego area, and encouraging sustained growth and development by promoting and bringing in additional electrical energy will result in compounded adverse environmental impacts which must be analyzed. SDG&E's Environmental Statement should address this issue also." (Enclosure 2, page 5)

My comments: These statements taken from the enclosed copies of correspondence document an important issue of public concern that is inadequately and incompletely addressed in the draft EIS/EIR. Future water availability is a real problem for the San Diego area, and it is absurd that there is no consideration of this fact and its implications in the draft EIS/EIR. There is no evidence that the demand forecasting has included an accounting of this critical factor, yet it may well be that future water availability will set limits to future growth far below that projected as justification for the APS/SDG&E Interconnection Project.

At present the sewage treatment capacity of the San Diego area is grossly inadequate and will remain so even with the completion of additional treatment facilities currently contracted for or under construction. Untreated sewage flows local bays and beaches, and has created a near-epidemic outbreak of hepatitis in San Diego (be sure to get your gamma globulin before visiting). This endangering of the public health could well force a moratorium on growth, preventing all new sewage hookups until treatment capacity is increased substantially. There is no evidence that the demand forecasting in the preparation of the draft EIS/EIR has considered this possibility of a limit to growth either.

D [The primary need of the proposed Project is oil/gas displacement. See Chapter 1 of the SDES. Refer also to Response No. 3.

C-51 (continued)

Mr. Bill Y. Lee

Page 3

E

The assessment of future growth of electric demand, and of the impacts arising from meeting this projected demand, is so far removed from the actual reality of San Diego's critical problems as to make these portions of the draft EIS/EIR meaningless.

The Final Environmental Statement on this project will not be complete and adequate unless it includes a thorough discussion of these problems and how they relate to the forecasted demand used to justify the APS/SDG&E Interconnection Project. In the worst case (i.e., water supply and sewage treatment constraints that force a moratorium or slow-down on growth in San Diego), what then would be the projected electric demands? What would be the implications of unneeded excess electric energy capacity in this situation of reduced demand? How would this affect SDG&E's efforts to eliminate wasteful electric use? Would the availability of unneeded capacity lead to wasteful applications and use throughout the service area because of a temporary glut in supply, acting to retard improvements in conservation, end-use matching and reliance on decentralized energy alternatives?

"10. Fire protection and increased fire damage potential." (Enclosure 1, page 6)

"14. Facility impacts from failure, improper function, and "acts of God." (Enclosure 1, page 6)

"Finally, as well as assessments of the impacts predictable from routine expectations, the impacts that could arise from failure of, improper function of, or "acts of God" upon any and all components of the project should also be included." (Enclosure 2, page 4)

F

My comments: The draft EIS/EIR is inadequate and incomplete in scope because it does not include an analysis of these issues. There is a clear omission in this area of critical concern. What is the fire risk associated with this project, and how great might be the social/economic/environmental impacts of a fire (such as the 1970 Laguna Fire that devastated eastern San Diego county), should one be caused by this proposed project? What are the probabilities of accident, sabotage, various categories of system/equipment failure and malfunction, and "acts of God" such as severe earthquake or catastrophic meteorological conditions? Could an earthquake topple a tower? Could severe runoff and resulting erosion from a hurricane undermine tower footings? Could human error during construction, or during subsequent maintenance lead to induced sparks and initiation of wildfire in remote and inaccessible regions?

Clearly such events are risks with finite probabilities, and the Final Environmental Statement cannot be complete unless the probabilities of such risks are estimated, and the social/economic/environmental impacts that would arise from actual occurrence of each class of risk are included for comparative purposes. Omission of this information in the draft EIS/EIR invalidates it, and the Final Environmental Statement must address these issues of public concern to be complete. It is wholly contrary to the public interest in this matter of the proposed PS/SDG&E Interconnection Project to omit analysis and discussion of these issues.

E [Refer to SDES, Chapters 1 and 3, and Response No. 3.

F [Refer to DES, page 3-21, and response to similar comments presented in Letter Nos. B-34, C-1 and C-49 (Table 2-2F).

C-51 (continued)

Mr. Bill Y. Lee

Page 4

"12. Increased access to undisturbed areas." (Enclosure 1, page 6)

"...the environmental impacts of these new roadways, plus the impact resulting from greatly enhanced off-the-road vehicle (ORV) use adjacent to these new roadways should be included." (Enclosure 2, page 4)

My comments: The draft EIS/EIR is incomplete and inadequate in its assessment of the probable impacts that will result from increased access to remote, relatively roadless areas. This single feature has greater overall potential for severe, irreversible adverse impacts on the environment than any other aspect of the APS/SDG&E Interconnection Project, yet it is nowhere adequately discussed and analyzed in the draft environmental document. Perhaps arising from the superficial and inadequate treatment of this area of major concern, the applicant's proposed selective mitigation measures related to the adverse impacts of increased access demonstrate a lack of understanding of the problem and a lack of true commitment to actual protection of the environment. This is clearly contrary to the public interest.

The Final Environmental document will be inadequate and incomplete unless the omissions concerning the issues of increased access to remote, undisturbed areas are corrected. There must be acknowledgment and discussion of the body of knowledge developed in the Council on Environmental Quality publication, "Off Road Vehicles on Public Land," by David Sheridan (U.S. CPO# 041-011-00041-6), as it pertains to the implications of the proposed APS/SDG&E Interconnection Project.

G

See response to Comment 1 of Letter No. B-32. Refer to SDE5, Table 5-1, Generically Committed Mitigation, Nos. 1, 4, 5 and 9. Refer also to SDE5, Table 5-2, Selectively Committed Mitigation, Nos. 1, 2 and 10.

H

"SDG&E should examine the environmental impacts resulting from changing its rate structure, from a vigorous promotion of electrical energy conservation and end-use matching, and from investing its capital in alternative, decentralized technologies based on renewable resources, as described in Amory Lovins' Soft Energy Paths." (Enclosure 2, page 5)

My comments: The scope of the draft EIS/EIR is notably deficient in these areas of concern expressed during the original scoping process. The omission of a thorough analysis of possible alternatives to this proposed project render the draft EIS/EIR incomplete and inadequate.

The so-called "no-action" alternative is based on a rather passive community response. The nature of a "no-action" alternative consisting of vigorous conservation and end-use matching efforts by SDG&E coupled with an aware community's active response would be completely different. This alternative, clearly in the public interest, has not been considered, nor have its impacts been estimated for comparison with the estimated impacts of the interconnection project.

The public interest also requires that the scope of the draft EIS/EIR include serious attention to decentralized energy alternatives that would provide the ultimate in long term reliability through greater local area self-reliance for meeting energy needs.

How much present and future electric demand could be replaced by an active promotion of substitution of renewable, solar-derived heat for the electric heat conventionally used so inefficiently to create hot air, hot water, or steam? How much future demand could be avoided by utilizing proven so-called "passive" solar design in all new construction?

H

The examination of environmental impacts resulting from changes in rate structure is outside the scope of the environmental review process for the proposed Project. The promotion of electrical energy conservation and use of alternative technologies based on renewable resources is addressed in the SDES beginning on page 3-3s. This review concludes that these alternatives are not capable of meeting the stated need, and therefore, examination of their environmental impacts is unnecessary.

C-51 (continued)

Mr. Bill Y. Lee

Page 5

Since questions such as these have evidently not been asked, it is impossible to compare the estimated impacts of the proposed APS/SDG&E Interconnection Project with the impacts of other alternatives. The Final Environmental statement must include an expanded consideration of possible alternatives and the estimated impacts associated with these.

In summary, the draft FIS/EIR is unacceptable. Its scope does not even come close to including all of the issues raised in the scoping process, and it certainly does not describe in advance the probable environmental impacts of the proposed action and alternative. Extensive additions need to be included in the Final Environmental Document to correct the areas of omission I have discussed in my comments.

Sincerely yours,



William L. Bretz, Ph.D.

2 Enclosures

C-51 enclosure



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

ARIZONA STATE OFFICE
2400 VALLEY BANK CENTER
PHOENIX, ARIZONA 85023

Enclosure 1

IN REPLY REFER TO
1792 (911)

July 27, 1979

The Bureau of Land Management and the California Public Utilities Commission held scoping meetings on the proposed Arizona-San Diego 500kV Interconnection Project. The meetings were successful due to the active participation of concerned citizens and agency representatives.

As expected, each of the four meetings had many similarities, but different emphasis concerning significant issues, concerns and route alternatives. A summary of each meeting is attached for your comparison as is a summary of written comments. The written comments generally parallel the scoping meetings' concerns.

We will change the emphasis from previous powerline environmental statements as a result of this scoping process to include more detailed analysis on: the electromagnetic effects, impacts on agricultural lands and farm operations, economic impacts on utility rates and property crossed, and effects on community growth, urban areas, residential properties and growth inducement.

The environmental document will also address all of the issues raised in the scoping process and all known Federal, State, and local requirements.

Also enclosed is a revised map depicting alternative corridors which will be examined. All those found to be reasonable will be analyzed at a commensurate level.

As requested at the meetings, we plan to hold hearings next summer in Phoenix, Yuma, El Centro, and San Diego about 30 days after the draft document is issued.

Again, let me express our appreciation to those of you who participated.

Sincerely,


State Director

Enclosures

C-51 enclosure (continued)

Twenty-five people attended the Scoping Meeting in Phoenix on June 25, 1979. After the formal presentation by the BLM and utilities, the participants were broken into four separate "nominal groups." Although 40 issues, problems, and concerns were identified by individuals in the four groups, many were the same or similar. Each participant was asked to select the five most important concerns from the 40 developed and rank them in importance. Due to the low number of participants and the wide diversity of concerns expressed, it is not possible to conclusively identify concerns in priority order. However, the following consolidated list will give an overall indication of the order we believe the significant issues were identified at this meeting.

1. Concerns related to the possible adverse impact to the natural environment. This included impacts to visual, recreational, cultural, archeological resources, wildlife, wildlife habitat (specifically, big horn sheep and riparian areas), unique natural areas and wilderness values (specifically Eagle Tail Mountains, Mitty Lake, Imperial Wildlife Refuge, Kofa Game Range and the Imperial Sand Dunes).
2. Impacts of the construction and maintenance of roads on frail desert soils and vegetation and the impacts of increased access and use (particularly littering and noise) on previously undisturbed and inaccessible areas.
3. The potential for using existing utility and transportation corridors or other disturbed areas for location of the transmission line to lessen overall impacts to the environment.
4. Potential impacts to existing and potential residential property and agricultural operations and development.
5. Adverse effect the transmission line could have on operation of electronic devices, communication systems, railroads, pipelines, roads, private landing strips and aerial agricultural spray applicators.
6. The need for close and continuous coordination on this project for all parties involved.
7. Loss of energy from transmission lines over long distances.

C-51 enclosure (continued)

Sixteen people attended the Scoping Meeting in Yuma on June 26, 1979. After the formal presentation by the BIM and utilities, there was an open discussion, questions and answers and public comments. The nominal group process was not followed due to the limited attendance. Following is a summary of the issues, concerns and questions posed:

1. Construction timetable and specifications and details of the proposed transmission line and substation.
2. Electrical effects and interference of transmission lines on radio, television, microwave, electronic devices and communication facilities.
3. Health effects and noise impacts of transmission lines and substations.
4. Consideration of impacts of proposal on the Yuma Marine Corps Air Station, specifically runway approaches and communication systems.
5. Will utilities acquire rights-of-way across private land by eminent domain?
6. Explanation of the type of structures other than the transmission line which would be permitted in the right-of-way.
7. Impact of this project on utility rates and cost breakdown of this project between California and Arizona.
8. The alternative of undergrounding the transmission line.
9. Impacts of this proposal to crop dusting and farming operations on prime farmlands.
10. Interaction of proposal with Wellton Mohawk proposed 161kv transmission line northeast of Gila Mountains.

C-51 enclosure (continued)

Twenty people attended the Scoping Meeting in La Mesa (San Diego) on June 28, 1979. After the formal presentation by the BLM and utilities, there was an open discussion, questions and answers and public comments. The nominal group process was not followed due to the limited attendance. Following is a summary of the issues, concerns and questions posed:

1. Why not closely follow the Mexican border?
2. Cost of undergrounding the entire transmission line.
3. What are the losses of power due to long distance?
4. Will Arizona get power from San Diego (reverse flows)?
5. Adverse impacts on Native American Heritage concerns and methods to recognize and reduce them.
6. Visual impacts of 500 Kv line and the 230 Kv system in San Diego area. Also, some concern about additional right-of-way needs for 230 Kv lines.
7. Impacts of "no action" or no project on the people of San Diego area.
8. What are the rate implications or costs to consumers?
9. Most concern was associated with the electro-magnetic or electrical field (corona) effects on human health, radio, TV and radar, communications and all other related facilities.
10. Some concern expressed about trade-offs between Agricultural impacts vs. Native American concerns (Tecate Mountain area).
11. Growth inducing impacts of additional power was a concern as well as the treatment of other limits to population growth, i.e., water was mentioned.
12. Project interrelationships, e.g., Palo Verde-Devers, and Tijuana, Mexico, interconnection.

A general emphasis on rate or consumer costs was a somewhat unique element to the San Diego meeting.

C-51 enclosure (continued)

Twenty-five people attended the Scoping Meeting in El Centro on July 5, 1979. After the formal presentation by the BLM and utilities, the participants were broken into seven separate "nominal groups." Although 40 issues, problems, and concerns were identified by individuals in the seven groups, many were the same or similar. Each participant was asked to select the five most important concerns from the 40 developed and rank them in importance. The following consolidated list, in priority order, is the significant issues which were identified at this meeting.

1. Adverse impacts to agricultural land including: aerial spraying, farm operations, land and production losses, irrigation practices, weed and insect control, etc.
2. Electro-magnetic effects on human health, electronic devices, land productivity and animals.
3. Impacts on urban areas and community growth, e.g., Calexico, Heber and El Centro.
4. Visual impacts.
5. Economic and environmental efficiency and inter-connections with Imperial Irrigation District and geothermal power production.
6. General impacts to wildlife, e.g., egrets and water fowl.

After the issue identification, there were several additional comments. An Imperial County Supervisor urged that all routes studied by the "Blue Ribbon Citizen Committee" be included in the BLM-CPUC environmental statement. The Chairman and a member of the above citizen's committee urged that all alternatives (including crossing the Salton Sea) that would avoid farmland impacts should be considered.

C-51 enclosure (continued)

The Bureau of Land Management and the California Public Utilities Commission received 22 letters during the scoping process. Following is a summarized list of the issues and concerns expressed:

1. Adverse impacts on agricultural operations, residential property and other land use.
2. Opposition to routes through agricultural land.
3. Electrical effects on health, electronic devices and communicating systems.
4. Impacts on aircraft runway approaches and visibility of conductor spans.
5. Socio-economic impacts of construction and operations.
6. Growth inducement impacts and effects on critical water in San Diego.
7. Location of towers near existing or proposed county roads.
8. Historic archeological concerns.
9. Impacts on natural environment, visual resources, recreation and cultural resources.
10. Fire protection and increased fire damage potential.
11. Suggest corridor be utilized as interstate off-highway recreation trail.
12. Increased access to undisturbed areas.
13. Impacts of related generation and transmission projects.
14. Facility impacts from failure, improper function and "acts of God."
15. Expansion of Miguel Substation.
16. Alternative tower design.
17. Need for detailed geotechnical data.
18. Suggest routing north of Imperial Valley.
19. Suggest routing along border through Imperial Valley.

C-51 enclosure (continued)

Enclosure 2

F.O. Box 20543
El Cajon, Ca. 92021
17 July, 1979

Stan Wagner
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona 85073

and

Steven Weissman
California Public Utilities Commission
350 McAllister Street
San Francisco, California 94102

Dear Mr. Wagner and Mr. Weissman:

I attended the joint scoping meeting concerning the Arizona-San Diego Interconnection Project that was held in La Mesa, California, on 28 June 1979; the purpose of this letter is to provide you with written input concerning some of the issues raised at that scoping meeting, and also to comment on the process of the meeting.

The PUC and ELM have taken a step in the right direction, seeking public input at such an early stage in their consideration of SDGE's proposed project; but from the perspective of a participating, interested citizen I must express my concern that this scoping meeting did not permit the designed objectives to be reached.

According to the agenda handed out at the registration table, this meeting was "designed to be an open process for determining the scope of issues to be addressed and for identifying what are and are not significant issues." Upon reading the agenda I felt that the format of the meeting, particularly the so-called "Nominal Group Process," was a well-conceived approach for obtaining public participation and input.

The meeting in La Mesa generally followed the outlined agenda through its initial stages, with the presentation of the SDGE spokesperson evolving into a general question and answer format. This was valuable, for many clarifying questions were raised; and indeed, a number of the issues that concerned the participating public could have perhaps been

C-51 enclosure (continued)

- 2 -

deduced from these questions. However, at about 8:30 pm, or approximately one hour after the meeting actually began, Mr. Stan Wagner abandoned the format outlined in the agenda by unilaterally cancelling the scheduled Nominal Group Process and proceeding directly into summarizing and concluding remarks.

It seemed to me that the Nominal Group Process was to be the core of the entire scoping meeting, being the mechanism by which the PUC and ELM would obtain organized and coherent input about the various environmental issues of concern, and their relative significance. Furthermore, this process would have provided the PUC and ELM with a written record of the participants' views on the matters under consideration. Consequently, I was disturbed that Mr. Wagner deemed this part of the scoping meeting unnecessary; and furthermore, I was disturbed to learn that this part of previous meetings in Phoenix and Yuma had been non-functional. I don't consider the general question and answer session alone to be an adequate mechanism for obtaining "public participation in identifying 1) significant environmental issues, 2) the range of impacts to be considered, 3) appropriate levels of detailed analysis, 4) alternatives to be considered, and 5) other related issues," to quote from the public announcement I read describing the purpose of these scoping meetings.

I would like to know if any record was kept, written or taped, of the verbal inputs provided by the question and answer format. If no record was kept, I would like to know how the public can be assured that its views, as expressed at the scoping meetings, will be considered when the PUC and ELM proceed to direct SD&E to prepare the Environmental Statement for the interconnection project. I am uneasy about placing the burden of remembering everything that transpired, and of correctly deducing unexpressed or implied concerns, on the PUC and ELM officials who were in attendance at the scoping meetings.

My point about the process of the joint scoping meeting I attended is this: I think the concept was good and there was the potential for obtaining public input in a smooth and efficient manner; but the execution of this concept was poor and ineffectual. I have had experience with processes similar to the Nominal Group Process that functioned well as mechanisms for obtaining exactly the type of inputs that the PUC and ELM ostensibly seek from the public in these scoping meetings. I do not think the PUC and ELM should abandon this approach for obtaining public participation and input concerning the content requirements of environmental impact documents.

C-51 enclosure (continued)

- 3 -

However, assuming that the PUC's and ELM's expressed interest in obtaining public participation is genuine and not feigned, then both agencies have considerable room for the improvement of their techniques.

In spite of my dissatisfaction with the way in which the La Mesa scoping meeting progressed, I do appreciate the chance to provide the PUC and ELM with verbal and written comments concerning SDG&E's proposed Arizona-San Diego Interconnection Project.

The burden is on SDG&E to show that this proposed project can be justified. Therefore, to be complete, the environmental impact document SDG&E is required to prepare should contain analyses of all environmental issues and impacts that have been raised in the scoping process. Every one of these has potential significance, and it is the process of analysis that should decide actual significance, not arbitrary and convenient decisions. I am listing below a number of issues and impacts that are of concern to me, and that seem to me to be of potential significance. I will be very unhappy if any one of these, or any one of the other concerns submitted to you by other members of the public, is not in some manner addressed by SDG&E in their Environmental Statement. If SDG&E considers a particular concern to be trivial, let them document this view -- if it is a trivial concern this should be a simple matter that will not tax their resources.

1) Significant Environmental Issues:

The project would cross, and therefore impact, about 280 miles of diverse, and in some ways very fragile, ecosystems. This 330' wide corridor would form a continuous swath cutting through thousands of acres -- many of which are public lands. There is a special concern involved with impact proposed for public lands -- how might these impacts adversely affect other established or potential uses of these and other nearby public lands? SDG&E must address the broadest range of impacts in the finest detail that their resources permit, which would include, but not be limited to, those suggested below. Any and all environmental issues are sufficiently significant to require inclusion in the Environmental Statement, with any trivial issues so identified and listed as duly considered and not overlooked. Some general issues associated with this project are:

- disturbance of plant and animal communities
- disruption of plant and animal communities
- soil erosion/ silt and sediment transport in air and water
- increased fire damage
- increased temporary and permanent access to remote areas
- biological effects of electromagnetic fields

C-51 enclosure (continued)

- 4 -

2) The Range of Impacts To Be Considered:

The range of impacts should include impacts resulting from the construction, operation, maintenance, and decommissioning phases of all the components of this interconnection project. The range should be broad enough to include a detailed perspective of the impacts arising from other "sine qua non" elements that will be involved (i.e., the construction, operation, maintenance, and decommissioning of the required power generating projects; the other sister high voltage interconnection projects). Furthermore, the impacts associated with making available for consumption the additional electrical energy to be carried by this project should be projected: how would this additional energy be used? how would the growth and development of areas absorbing this energy impact the environment? Finally, as well as assessments of the impacts predictable from routine expectations, the impacts that could arise from failure of, improper function of, or "acts of God" upon any and all components of the project should also be included.

3) Appropriate Levels of Detailed Analysis:

Throughout the range of impacts considered, the level of detail of the analyses should be sufficient to support all of the generalizations and conclusions put forth by SD&E. The data gathered for the analyses should be up-to-date, should be obtained by recognized, knowledgeable experts in the appropriate fields, and should be verifiable by outside independent authorities. The public lands belong to all the people, so it would be grossly inappropriate to gloss over the specific details of the environmental impacts wrought by this project -- an acre-by-acre assessment of the ecological perturbations would not be too detailed. Since each tower will be situated at the end of a maintenance road spur connected to existing roads, and since all of these roads on public lands will be public roads, the environmental impacts of these new roadways, plus the impact resulting from greatly enhanced off-the-road vehicle (ORV) use adjacent to these new roadways should be included. This interconnection project depends upon the production of electricity which will result in adverse environmental impacts on public lands elsewhere -- the level of analysis should be detailed enough to include these displaced impacts as well.

4) Alternatives To Be Considered:

The basic alternative to be considered is not carrying out this project, and not increasing the amount of electrical energy available to SD&E's customers in the future. SD&E should examine the environmental impacts resulting from

C-51 enclosure (continued)

- 5 -

changing its rate structure, from a vigorous promotion of electrical energy conservation and end-use matching, and from investing its capital in alternative, decentralized technologies based on renewable resources, as described in Amory Lovins' Soft Energy Paths.

5) Other Related Issues:

The proposed APS-SDG&E 500 Kv Interconnection Project would have growth inducing effects in the areas consuming its transmitted energy. Future water availability is a definite limit to growth in the San Diego area, and encouraging sustained growth and development by promoting and bringing in additional electrical energy will result in compounded adverse environmental impacts which must be analyzed. SDG&E's Environmental Statement should address this issue also.

In closing, I would like to ask you for answers to the following questions:

- 1) Is it possible to review the public input concerning the scope of the Environmental Statement that SDG&E will be required to prepare?
- 2) Can you provide me with a copy of the registration list of persons in attendance at the La Mesa scoping meeting?
- 3) What efforts were made to assure that all the necessary elements for effectively carrying out the Nominal Group Process would be present at the scoping meetings?

Thank you very much for providing me with the opportunity to present you with my views and concerns. If there is any way in which I can contribute further, please inform me.

Sincerely yours,


William L. Bretz, Ph.D.

Dr. William L. Bretz
P.O. Box 20543
El Cajon, Ca 92021

C-67

A-59575

Lucia S. Fisher
4555 Dehesa Road
El Cajon, Ca. 92021
November 3, 1980

ENVIRONMENTAL
IMPACT STATEMENT

Bill Y. Lee, Public Utilities Commission
PUC Division, 350 McAllister Street
San Francisco, Calif. 94101

NOV 6 1980 Comments
File

Dear Mr. Lee:

First I would like to thank you and the California Agencies involved for the constructive manner in which you conducted the Scoping Hearings and the extended hearings on the APS/SDG&E Interconnection Project you are now undertaking.

Attached is the fact sheet I have circulated to other housewives like myself around here (just east of El Cajon), that concludes the NO-ACTION ALTERNATIVE is most reasonable.

Also I would like to point out that one impact concern required by the Council on Environmental Quality is omitted from the EIS/EIR. This element is that of "URBAN QUALITY", promulgated in 1978 and effective July 30, 1979 to implement the National Environmental Policy Act. (Page 579 of the Tenth Annual Report of the Council on Environmental Quality) (NEPA 1502-160) page 573

It seems to me that if the San Diego Gas and Electric Co. persists in building this powerline, that efforts to mitigate Urban impacts should now be considered, and a mile-wide corridor required.

The Scope of the new Urban Element should be:

1. Loss of property values due to blight.
Mitigation: SD Gas & Electric Co. should buy all property within 1-mile wide corridor at current market values before beginning construction.
2. Health Concerns for children playing--that is, no metal fencing or metal pipes adjoining corridor.
Mitigation: SD Gas And Electric Co. must replace all metal fences and pipes with non-conductors.
Any use of PCB-treated elements absolutely prohibited.

Thankyou for the opportunity to voice my concern.

Cordially,

Lucia S. Fisher

Lucia S. Fisher

- A** [We believe that our impact analysis of the proposed action is presented in sufficient detail to allow the public and decision-makers to understand fully and consider the factors involved. Further, "urban-quality" issues are covered in our analysis of the resources of the natural, human and cultural environment. See Chapters 4 and 5 of the DES and SDES. See response attachment to Letter No. B-3.
- B** [We feel that a one-mile-wide corridor is not necessary. Refer to Response No. 2.
- C** [See response to Comment C of Letter No. C-49.
- D** [Use of PCB-treated elements is presently prohibited and PCB will not be used on the proposed Project.

C-67 enclosure

Memo on APS/SDG&E INTERCONNECTION PROJECT October 14, 1980
from L. Fisher 4555, Dehesa Rd. El Cajon, 92021

Dear Chairperson and Members of the Crest/Dehesa/Harbison Canyon
Subregional Planning Board:

At your regular meeting last night much concern was expressed as to the proposed APS/SDG&E INTERCONNECTION PROJECT which puts two 230 Kv lines right across the west of our area on the existing 525-foot right of way. The unhealthful prospects and large expense, and small need for the project were worries voiced.

This proposed line is to bring power all the way from Arizona to meet a supposed future need at very great expense to all present users. A Graph, page 3-6, figure 1-2 of the Draft Environmental Document shows there is "firm Transmission Capacity--with 20% reserve margin" until 1985 and later. Since all county growth will now be strictly limited by our pending loss of water allotment (shouldn't we set some aside for farmers?) from Arizona, and loss of projected increase in the Peripheral Canal, there is no need for huge electrical increase, and related threats to health, comfort and property values.

On page 30-11 of the EIR, Solar Energy is rejected as a viable source within the SD Gas & Electric "time-frame". Solar energy panels are available, and workable today to individual homeowners right in San Diego. I am starting with three, myself. Supervisor Jim Bates is initiating a project survey for County-owned facilities solar water heating projects at Board meeting 10/21/80. Of course, this is not a corporate solution for SDG&E, but it shows there is not an urgent customer need for the line from Arizona.

The health concerns in Crest/Harbison Canyon/Dehesa are: the danger to progeny from a substantial increase in magnetic field, and nuisance of general discomfort, electric field involvement in shocks, ozone manufacture, corona effects, photo-emissions, and noise increase and fire danger all along the line. There is no proposal to widen the already inadequate 525-foot right of way safety zone. Page F-5 EIR says a 2640-foot safety is needed. Some researchers say a mile wide is only security to progeny. (Only time will tell.)

The Jamul-Dulzura Planning Group has already filed concerns. Last night there was much discussion of what Crest-Dehesa-Harbison could do. Here is a suggestion:

Attend Supervisor's meeting Oct. 21 at 8:30 A.M. to file card voicing support of Health Improvement and Solar Energy development. Why not request Supervisors for a resolution to forward to the PUC by the November 7 deadline? (to Bill Y. Lee, Public Utilities Commission, PUC Division, 350 McAllister St., San Francisco, Ca. 94101)

c.c. to all Subarea Boards, County Supervisors, Planning & Health Staffs, and Bill Y. Lee, PUC.

Dear Mr. Lee - I am just a housewife. I do not belong to the Crest/Dehesa/Harbison Planning Group - but I support them faithfully. So I prepared this fact sheet for them from the EIS so they can generously replied to me. Cardially - Lucia S. Fisher

D [Refer to Response No. 3.

E [We agree that solar energy is a viable source, but it is not a viable alternative of this time.

F [Refer to DES, Appendix E, and Response No. 1.

Petition with eight signatures was also enclosed with letter.

C-69

A-59575



San Diego County Archaeological Society, Inc.

Environmental Impact Report Review Committee
P. O. Box A-81106 San Diego, Cal. 92138

November 5, 1980

ENVIRONMENTAL
IMPACT BRANCH

NOV 10 1980

To: Mr. Bill Y. Lee
Public Utilities Commission
Utilities Division
350 McAllister Street
San Francisco, California 94102

Subject: Draft Environmental Document (EIS/EIR)
AFS/SUE Interconnection Project

Dear Mr. Lee:

Last week I received, from another organization, a copy of the referenced EIS/EIR. Given the short time available to us for review due to the failure of EIM to get a copy to us, these comments are somewhat limited, and they may have arrived at your office shortly after the November 7th deadline which was given to me by the person supplying the document. Nevertheless, we would ask you to consider them.

The failure of EIM to send us a copy of the EIS/EIR or any notice of the availability of the report is highly surprising, as we have in the recent past received environmental documents from EIM, such as those for EIM's McCain Valley area in San Diego County. It is doubly surprising since WirthAssociates, the environmental consultant which prepared the document, is aware of the existence and interest of the San Diego County Archaeological Society in the archaeology of the region, and the Jacumba area in particular. This interest in the Jacumba area springs from a series of outings in the Table Mountain area, north of Interstate 8, where we have systematically surveyed a six square mile area and conducted several test excavations under a federal antiquities permit.

According to the EIS/EIR, the power line corridor was subjected to a sampling process. Basically, this was used to determine which areas are culturally sensitive. What this process does not do is identify specific impacts to specific resources and recommend specific mitigation measures to be applied. To put it another way, the sampling method is a good tool for macro-impact analysis, it is not adequate for micro-impact analysis. Unless additional environmental documents are to be made available for public review and comment on the specific plans for construction of the power line and the related facilities (including construction and access roads, etc.), this document does not provide adequate information to evaluate the actual project impacts to cultural resources. Furthermore, not only does the public not have this information, but neither do the applicants and their consultant.

A [We agree that a sampling method does not identify all site-specific impacts. The DES and SDES represents corridor recommendations. If the proposed Project is approved, the right-of-way will be 100% surveyed to determine site impacts and appropriate mitigation measures.

C-69 (continued)

-2-

San Diego County Archaeological Society, Inc.

To: Mr. Bill Y. Lee, California Public Utilities Commission
Subject: Draft EIS/EIR for APS/SD&E Interconnection Project

B [What is provided in the report is "generically committed mitigation". But how useful is this? It includes such inexact, non-specific terms as "wherever possible" and "to the extent possible", and, we feel, does not constitute mitigation of impacts. Impacts cannot be mitigated if they are not known; they cannot be known if the complete route has not been surveyed for cultural resources.

C [There are several other concerns we would like to raise:
(1) What about Mexico? Although the route parallels the border for a substantial distance, there appears, in our limited review, no mention of any impacts in Mexico, nor any evidence that individuals, agencies or organizations there were consulted.
(2) Since no copies of the archaeological technical reports have been made available to us, we cannot tell what survey methods were utilized. With the known possibilities for geoglyphs (intaglios) in the Colorado desert, an airborne survey should be made of the routes.
(3) The areas identified in the California Desert Plan EIS as ACEC's should be avoided entirely. So should such areas as cremation/burial areas, rock art sites and villages mentioned on pages 5-28 through 5-31.
(4) The In-Ko-Pah Gorge/Mountain Springs Grade area is a part of the transportation history of San Diego and Imperial Counties, as well as being highly scenic. If the area, including the Desert View Tower and the town of Mountain Springs, is properly judged to have such historic values, then running the power line through it may not be appropriate.

There are, almost certainly, other comments we would raise had we the technical reports for cultural resources to review and had we been provided a copy of the EIS/EIR early enough to permit a more in-depth review. Still, we are grateful for the opportunity to be heard by BLM and CPUC.

Sincerely,

James W. Royle, Jr.
James W. Royle, Jr.
Member, EIR Review Committee

B [As stated in the DES, page 5-24, "Generically committed mitigation (Table 5-1, No. 11) provides for intensive cultural-resource surveys so that impacts to resources may be avoided or specific mitigation appropriate for each resource potentially impacted."

C [No significant impacts to Mexico are anticipated.

D [Technical reports are available of the BLM and CPUC offices. Because of the intensive corridor-selection process which involved aerial reconnaissance, the preferred route avoids all intaglios.

E [Cultural resources occurring within ACECs are considered "identified special areas." Refer to DES, page 4-53.

F [No significant impacts to historical resources are anticipated in the In-Ko-Pah Gorge/Mountain Springs Grade area.

C-71



P. O. BOX 27 HOLTVILLE, CALIFORNIA 92250 PHONES (714) 356-4567 I.D. (714) 356-4666

JOE MAGGIO, INC.

November 6, 1980

Honorable John J. Doran
Administrative Law Judge
California Public Utilities
Commission
350 McAllister Street
San Francisco, CA 94102

RE: APPLICATION 50575

Dear Judge Doran:

I am secretary and treasurer of Joe Maggio Inc. and production and operations manager. I have been in agriculture all my life, involved with crop production and operations for 20 plus years. I am a graduate of the California State Polytechnic University, School of Agriculture.

We have farming operations in Arizona and California. The base for our agricultural operations is Imperial County. We also have farming operations in the central portion of California.

Joe Maggio Inc. has been growing carrots in the southern portion of Imperial County for over 30 years and growing broccoli for 8 years. We also grow cabbage, cantaloupe, lettuce, onions, alfalfa, wheat, beans and whatever crop we feel is suitable for the unique farming area here in the southwestern United States.

I am most disturbed and concerned with the inadequacy of the agricultural study of Imperial County found in the Draft Environmental Document.

Table I: Span of Transmission Centerline over Crops -- California Link 129. Why are carrots not listed under crop? Why does broccoli show zero miles? Crops are constantly being rotated from one field to another. This table does not take into consideration the future rotation possibilities of the farmland affected by the link 129 transmission corridor.

Appendix A of the Agricultural Study:
Table II: Typical Farming Operations -- broccoli. Irrigation operations under equipment show D.N.A. - for does not apply. We use sprinkler equipment to pre-irrigate and to germinate the seed.

A

See Response No. 4. Also, Table I of Appendix D of the DES summarizes crop surveys made in October and November 1979; when neither carrots nor broccoli were growing along link centerlines. All other croplands newly planted or bedded up, plus land containing emerged lettuce, were inventoried as lettuce, the major crop planted at that time.

B

The term D.N.A. under Irrigation Operations is used to indicate that solid-set hand-move sprinkler systems used to germinate vegetable crops would not be impeded by the transmission-tower structure. Such lines and their laterals can be laid through the transmission tower with no impact or additional cost to the farmer.

C-71 (continued)



JOE MAGGIO, INC.

P. O. BOX 27 HORTVILLE CALIFORNIA 92250 PHONES (714) 356-4567 LD (714) 356-4666

C [Typical dimensions vary but a sprinkler pipe trailer loaded with pipe can reach a height of $7\frac{1}{2}$ to 8 feet. Sprinkler pipe dimensions vary, but the type we use are 30 to 40 ft. long and made out of aluminum. One man can easily handle a pipe by himself. If a man were standing on a nearly loaded sprinkler pipe trailer with a sprinkler pipe in the upright position under the transmission lines, where the minimum clearance is 41 ft., it is possible that the pipe could come into contact with the 500 Kv line.]

D [Pest Control Operations under Equipment and Typical Dimensions -- show D.N.A. -- for does not apply. This is a complete disregard of aerial applicators of Imperial County. I have been told on several occasions by my aerial applicators that they could not spray a portion of a field because of the high rise transmission lines which cross that field. Here in the Imperial Valley we have the largest insect pest population in the Southwestern United States. We farm 12 months a year, have pest problems 12 months a year and have to use aerial application 12 months a year.]

E [Harvest operations under equipment and typical dimensions show D.N.A., for does not apply. We use Likens Harvestors to harvest our broccoli crop. These machines move across the field on their own power and are 80 plus ft. wide. These harvestors move across a field width-wise.]

These three important factors of farming operations, Irrigation, Pest Control and Harvesting, which were labeled, "Does Not Apply" can also be found in the table for cabbage.

In the table for cantaloupe, Irrigation and Pest Control were labeled, "Does Not Apply", this is not a correct statement.

Table V: Carrots: Irrigation and Pest Control received a label of D.N.A. Sprinkler equipment is used to pre-irrigate and germinate our carrots, so "Does Not Apply" is not a true statement. Under Equipment and Typical Dimensions for Aircraft "D.N.A." is not a true statement. Under Harvest Method we use both machines and hand bunch crews, sometimes there will be over 100 people hand bunching carrots in a certain section of a field up to 8 hours a day.

C [Refer to Response No. 4.]

D [Similarly, usage of the term D.N.A. for Pest Control Operations does not indicate an unawareness on the part of the researchers of the realization that most such applications are accomplished by aerial applicators. The issue of additional costs incurred by farmers due to the imposition of transmission towers in fields has been addressed on page D-18 (paragraph d.) of the DES.]

E [Harvest Operations for broccoli were assumed to be the pick-and-pitch method, rather than the mechanical-harvester method mentioned by Mr. Stergios. The harvesting method used in the Agricultural Study involves only a tractor and trailer and field workers who cut and pitch the harvested broccoli onto the trailer. Under such a harvest operation there would be no physical impediments by the transmission tower. See Response No. 4 for discussion of Likens harvester.]

C-71 (continued)



JOE MAGGIO, INC.

P. O. BOX 27 HOLTVILLE, CALIFORNIA 92250 PHONES (714) 356-4567 L.D. (714) 356-4666

F [I could continue through the typical farming operations appendix pointing out other untrue statements, but I think I have made my point. This Agricultural Study is not adequate. I feel that a new agricultural study should be made and that it should be authored by a committee of Imperial Valley agriculturalists who are experienced in the various fields of Imperial County Agriculture.

F [We feel the Agricultural Study is adequate.

G [Two items that are very important here are:
1. The Imperial Valley fulfills all three of the characteristics of "Unique" farmland.
2. Future agricultural growth in the Imperial Valley will not come from expansion of farmland but rather from the expansion of production from our present farm acreage.

G [See Response No. 4.

What I want to impress upon you is that every acre of unique farmland lost here in the Imperial Valley can not be replaced. Food is the energy of life. The production of food will be hindered greatly by the transmission corridor. This corridor should go around all farmland of the Imperial Valley.

Sincerely,

George Stergios

George Stergios

CC: S.A. Weissman
N.W. Puette

srn

TABLE 2-3F
DRAFT ENVIRONMENTAL STATEMENT

Comments at Public Hearings

Summaries of Comments and Responses

<u>Speaker No.</u>	<u>Name</u>	<u>Issue/Concern</u>	<u>Response</u>
<u>Phoenix, Arizona - 1 October 1980</u>			
1	Jones Osborn Arizona State Senate	Should avoid agricultural impacts. Growth - Inhibit growth of Yuma. Suggests study of alternatives to north.	Refer to Response No. 4. Refer to Response No. 3. SDES and FES respond to issues.
2	Dale Stewart Arizona Agricultural Aviation Association	Agriculture - Loss of prime farmland, Aerial-application hazard. Opposed to route crossing agricultural land.	Refer to Response No. 4.
3	Tommy L. Long representing Yuma APS/SDG&E Project Relocation Committee	Same as Letter No. B-37.	See response to Letter No. B-37 (Table 2-1F).
4	Richard Countryman Arizona Commission of Agriculture and Horticulture	Agriculture - Impact to prime farmland. In regard to the Arizona Native Plant Law, "We in the Commission feel that a transmission line should take great care in not disturbing any more of our protected native plants than possible. And, if they are to be removed or destroyed that we have the opportunity to salvage them and place them in public institutions for landscaping purposes."	Refer to Response No. 4. If a right-of-way is granted by BLM, the Applicant will be required to comply with applicable Federal, State and local laws and regulations. Arizona State law provides that the Arizona Commission of Agriculture and Horticulture be given at least 30-days notice prior to construction to allow them the opportunity to locate and salvage protected plants as necessary. Removal of protected plants, such as saguaros, will be performed in accordance with State regulations. Vegetation clearing will be limited to the minimum needed for the safe construction and operation of the facilities.
<u>Yuma, Arizona - 2 October 1980</u>			
5	Edna McDonald for Congressman Bob Stump	Will cooperate to solve problems.	None
6	Tommy L. Long representing Yuma APS/SDG&E Project Relocation Committee	Same concerns presented in Letter No. B-37 (Table 2-1F).	See response to Letter No. B-37 (Table 2-1F).
7	Gary Crist Yuma Mesa Irrigation and Drainage District	Growth - Inhibit growth of Yuma. Property value - Future land-use options would be limited. Electrical effects - Health and safety and instantaneous ignition. Agriculture - Impact to farming operations and loss of prime farmland; aerial-application hazard (inadequate coverage, additional cost). Suggests further study and evaluation of alternatives to north and relocation of 500kV switchyard to area of Highway 95 and Laguna Mountains. Use "desert land with no tax base" instead of agricultural land.	Refer to Response No. 3. Refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 4. SDES and FES respond to issues.
8	Tom Cole	Agriculture - Impact to prime farmland. Aesthetic impact. Prefers Link 28 through Yuma Proving Ground. Suggests use of El Paso Gas pipeline corridor. Opposed to crossing Adair Park. Opposed to transmission line crossing Dame Valley.	Refer to Response No. 4. Aesthetic impacts were analyzed in DES and SDES. Refer to Response No. 10. Following the El Paso Gas pipeline (also Pala Verde-Devers transmission line) would not meet APS's need to provide additional energy to Yuma; would not improve reliability between APS, IID and SDG&E; would not provide SDG&E with access to geothermal energy in Imperial Valley and potentially in Mexico. See also DES page 3-26. The transmission line would not cross Adair Park. See page 1-11f of this document. Your comment has been noted and will be considered in the final decision.
9	John Scarbrough	Opposed to route through the subdivision he is developing in Yuma area.	Additional routings were studied. Refer to SDES and Response No. 2.
10	Jim Lenertz	Opposed to preferred route through Yuma area. Suggests following existing transmission-line route to north (Pala Verde-Devers). Alternative energy sources and/or conservation (suggests peak-load pricing etc.). APS proposes the transmission line to sell PVNGS power to San Diego. Questions need for Project. "...would APS build this line or another line to Yuma if Yuma was the only thing at the end of the line?"	SDES and FES respond to issue. Refer to response to comments of Speaker No. 8. Refer to SDES, page 3-4s, and Response No. 5. See Chapter 1 of SDES for revised statement of need. SDG&E has no contracts for power purchases from PVNGS. The PVNGS switchyard is a major intertie for the Western Grid System and is therefore a convenient delivery point for transferring coal-fired power-purchases that SDG&E has contracted for from the east. Refer to SDES Chapter 1. Yes. APS considered building a 230kV transmission line to Yuma to serve forecast power needs in the lower Colorado River area before learning of SDG&E's proposed Project. Plans for the 230kV line were dropped when APS and SDG&E agreed to sponsor the proposed Project.

Table 2-3F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
10 (cont)	Jim Lenertz	Recommends independent evaluation of the need of Project.	jointly. By participating in the proposed Project, APS (and its ratepayers) would realize considerable monetary savings in construction costs. We believe the purpose and need statement is adequate. See Chapter 1 of SDES.
11	Jack Ramsey	Agriculture - Impact to farming operations.	Refer to DES, Appendix D, and Response No. 4.
12	David Roddick Unit B Irrigation and Drainage District	Electrical effects - Health and safety (hazard to irrigation district's operation and maintenance under lines). Agriculture - Impact to farming operations. Growth - Inhibit orderly development of District. Suggests further evaluation of alternatives to north. Residents have as much right to protection as animals and vegetation. The southern route would be disruptive to the human niche in the environment.	See response to similar comment presented in Letter No. B-8 (Table 2-1f). Refer to Response No. 4. Refer to Response No. 3. SDES and FES respond to issue. Refer to Response No. 9.
13	Clyde Gould Wellton-Mohawk Irrigation and Drainage District	Objects to emphasis on natural-resource values and the exclusion of human values. Centerline not identified in corridors; should be available to review by affected parties before final approval. Supports APS/SDG&E Project Relocation Committee recommendations. Suggests routing north of irrigation district, one mile north of Links 23 and 26, substituting Link 74 for Links 36 and 37. Prefers Link 28. Agriculture - Impacts to farming operations. Property value. Electrical effects - Interference with electronic communications reception.	Refer to Response No. 9. Refer to Response No. 11. SDES and FES respond to issue. Refer to Chapter 1 of this document. Refer also to Response No. 10. Refer to Response No. 4. Refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1.
14	Barry Goldwater U.S. Senate	Opposes southern route and suggests northern route. Agriculture - Impact to prime farmland Property value.	SDES and FES respond to issue. Refer to Response No. 4. Refer to Response No. 2.
15	Jones Osborn Arizona State Senate	Same concerns presented as Speaker No. 1.	See response to comments of Speaker No. 1.
16	Ronald C. Ethington Rio Verde Helicopters and Yuma Aerial Applicators Association	Agriculture - Loss of farmland (other routes over nonfarmland available), Aerial application hazard (pilot-collision hazard more important than bird-collision hazard). Proposed transmission line through Yuma Mesa would displace farm-operation bases and farming support-businesses. Electrical effects - Safety (hazards to farm-workers; instantaneous ignition of fuel). Elimination of two primary airstrips of the Mesa and southern half of Yuma Valley.	Refer to Responses Nos. 4 and 9. Also, SDES responds to issues. Refer to DES, Appendix E, and Response No. 1. The BLM and northern environmentally preferred route would have minimal impact to airstrips.
17	Keith Benton Yuma County Water User's Association	Supports northern route. Supports position of Speaker No. 6 on location of Yuma switchyard to the north. Feels California benefits from proposed Project at the expense of Arizona. Agriculture - Impact to prime farmland and farming operations, inadequate coverage of aerial applications. Electrical effects - Health and safety (hazard to canal/lateral maintenance under lines and cost of shielding lines crossing canals hazards to farm workers, instantaneous fuel ignition), interference with operation of mechanical, laser and telemetric farming equipment. Proposed route crosses historic site at Colorado River crossing. "APS had other plans to bring a 230kV line in before this nuclear line came up."	SDES and FES respond to issue. SDES responds to issue. See SDES, Chapter 1, pages 1-2s through 1-5s for benefits to Arizona and the Yuma area. Refer to Response No. 4. Refer to DES, Appendix E, Response No. 1 and response to similar comment presented in Letter No. B-8 (Table 2-1F). The BLM and northern environmentally preferred routes avoid the site. The proposed transmission line is not part of a nuclear project. See response to Speaker No. 10 (Table 2-3F) for function of PVNGS in proposed Project, and APS's consideration of 230kV transmission line before participation in proposed Project.
18	Bill Embree Yuma County Farm Bureau	Supports APS/SDG&E Project Relocation Committee recommendations. Agriculture - Impact to prime farmland. Agriculture study inadequate. Failed to evaluate all possible routes on equal basis. Suggests route further north away from agricultural land and residential areas. Ecological well-being was placed above that of people. Growth - Preferred route would interfere with orderly expansion and growth. What would happen to Yuma's power supply in case of disaster at Yucca switchyard?	See response to Letter No. B-37 (Table 2-1F). We believe the study is adequate and is supported by Response No. 4. The routes were studied on an equal basis. SDES and FES respond to issue. Refer to Response No. 9. Refer to Response No. 3. Yucca Site - A disaster at the Yucca site could wipe out the 500/69kV sub, Yucca 69kV sub, Yucca steam plant, Yucca gas turbines and the 161kV line to Pilot Knob, representing the worst outage to the area - a potential loss to APS of 282 MW. The only firm

Table 2-3F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
18 (cont)	Bill Embree Yuma County Farm Bureau		<p>electric source into the area would be at least 81 MW of wheeling via the U.S.B.R. 161kV line. Under these conditions, only very critical loads would be served.</p> <p><u>North Gila Site</u> - A disaster at the North Gila site could take out the 500/69kV sub, the 161kV line from Gila to Pilot Knob and the Senator Wash 69kV line. The APS loss could be about 110 MW, leaving resources of 263 MW, which would result in same curtailment. The Pilot Knob and Senator Wash loads would be fed via other transmission lines.</p> <p><u>Gila Site</u> - At the Gila site, there would be a loss of the Gila 161/34kV, 161/69kV and the 500/69kV sub, as well as 2-161kV, 2-34kV and 3-69kV lines. Service to the 34kV, U.S.B.R. 69kV and some of the APS 69kV lines would be lost. The new Wellton-Mohawk 161kV tap and the 34kV upgrade to 69kV would allow the Yuma Proving Ground and Senator Wash to be picked up by line switching. Since APS has 81 MW wheeling capacity on the 161kV line, curtailment would be required.</p> <p><u>Dome Site</u> - A disaster of the Dome site could take out the 500/69kV sub and the Parker 161kV line. This would result in a loss of 110 MW from the 500kV source and 50 MW (165 MW rated) from the 161kV line. Same curtailment would be required depending on power available from Pilot Knob.</p> <p>NOTE: North Gila and Gila sites could experience both long-term and short-term outage. The short-term outage would occur until all area sources (transmission switching, Yucca Steam Plant and the Yucca Gas Turbines) are tied in.</p>
19	Tam Charles Yuma Irrigation District	<p>No land use classification for private lands noted in study.</p> <p>Agriculture - Impact to prime farmland and farming operations.</p> <p>Alternate routes to north not adequately discussed.</p> <p>Suggests avoidance of agricultural land and residential areas.</p> <p>Location of line not identified within corridor. Without centerline, impossible to determine impacts.</p> <p>Impact on wildlife minimal compared to impact on farming.</p> <p>"Why take any private land with all that federal land available . . .?"</p>	<p>Private land is included in "County and Other" jurisdiction classification. Jurisdictions were identified rather than land ownership.</p> <p>Refer to Response No. 4.</p> <p>SDES and FES respond to issues.</p> <p>Your comment has been noted and will be considered in the final decision.</p> <p>Refer to Response No. 11.</p> <p>Refer to Response No. 9.</p> <p>Refer to Response No. 8.</p>
20	Robert Kennerly Yuma County Board of Supervisors	Supports APS/SDG&E Project Relocation Committee recommendations. Opposed to transmission line through Yuma area. Suggests an alternate route be considered.	SDES and FES respond to issues.
21	Bob Nartan for Councilman Barnard, City of Yuma	<p>City Council passed resolution which includes:</p> <p>Agriculture - Impact to prime farmland and farming operations, aerial applications hazard.</p> <p>Suggests study and reevaluation of alternative to north.</p> <p>Suggests relocation of 500kV switchyard to north eliminating need for dual crossing of river.</p> <p>Electrical effects - Health and safety (hazard to irrigation district's operation and maintenance cost).</p> <p>Growth - Interference with direction of community's growth.</p>	<p>Refer to Response No. 4.</p> <p>SDES and FES respond to issues.</p> <p>Refer to Responses Nos. 1 and 4. See also response to similar comment presented in Letter No. B-8 (Table 2-1F).</p> <p>Refer to Response No. 3.</p>
22	Narman J. Riebe	<p>Opposed to environmentally preferred route. Riebe property would be severely damaged.</p> <p>Suggests routing to north to avoid agriculture land and residential areas.</p> <p>Questions route-selection process.</p> <p>Agricultural impacts.</p> <p>Property value.</p> <p>Electrical effects.</p>	<p>SDES and FES respond to issues.</p> <p>Refer to Response No. 11.</p> <p>Refer to Response No. 4.</p> <p>Refer to Response No. 2.</p> <p>Refer to DES, Appendix E, and Response No. 1.</p>
23	Robert Moore Agri-Business Council	Supports APS/SDG&E Project Relocation Committee recommendations. Opposed to transmission line through Yuma.	SDES and FES respond to issues.
24	Jim Rogers Yuma Chamber of Commerce	<p>Supports APS/SDG&E Project Relocation Committee recommendations.</p> <p>Electrical effects - Health and safety, interference with communication equipment, laser equipment, monitoring equipment (radar), photoelectric monitors, electronic equipment.</p> <p>Agriculture - Impact on prime farmland and farming operations.</p> <p>Human values should take precedent over ecological values.</p>	<p>SDES and FES respond to issues.</p> <p>Refer to DES, Appendix E, and Responses Nos. 1 and 4.</p> <p>Refer to Response No. 4.</p> <p>Refer to Response No. 9.</p>

Table 2-3F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
25	Helen Nickson	Opposed to use of PCB in transformers. Concerned more about impacts to humans than fauna. Questions impact on Yuma electric rates to support San Diego's electric-power need. Opposed to proposed Project.	See response Comment D of Letter No. C-67 (Table 2-2F). Refer to Response No. 9. There will be no rate increase due to the proposed Project. The combined Project is a financial benefit to both utilities. Refer to DES, Chapter S, page S-18. Your comment has been noted and will be considered in the final decision.
26	Roy Young	Electrical effects - Health and safety. Prefers use of public lands. More research was conducted to determine ecological impacts than impacts to humans. Requests further study and reevaluation of alternatives to north.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 8. Refer to Response No. 9. SDES and FES respond to issue.
27	Patty Kelly Connor	Opposed to transmission line crossing Cannar property in Hyder-Doteland area. Suggests alignment on Federal land to north or south.	Your comments have been noted and will be considered in the final decision. Refer also to Response No. 8.
28	Howard Moore	Opposed to transmission line that would cross Moore property. Supports APS/SDG&E Relocation Committee Project Recommendations. Suggests routing to north.	Your comment has been noted and will be considered in the final decision. SDES and FES respond to issue.
29	Herbert McDonald	Electrical effects (electrical fields may be detrimental to plant experimentation at University of Arizona experimental farms).	SDES and FES respond to issues.
30	Dale Schulte	DES, Chapter S, pages 34-38, "Electrical, Biological, Health and Safety Effects" inadequate; does not stress safety problems. Suggests routing to north.	We believe the DES, Appendix E adequately describes the potential safety problems associated with the proposed transmission line. Refer to Responses Nos. 1 and 4. SDES and FES respond to issue.
31	Darlene Oney Yuma Proving Ground	"...willing to work with Yuma community toward the goal of finding a mutually acceptable power line route."	None
<u>El Centro, California - 6 October 1980</u>			
32	Donald Twogood Imperial Irrigation District	Supports proposed Project and environmentally preferred route. Interconnection beneficial for IID. Negotiating with SDG&E for transmission line capacity.	None
33	Ron Blair, Commander Naval Air Facility, El Centro	Concern about hazard to military aerial maneuvers in area (Links 136 and 116).	The environmentally preferred route does not include Links 136 or 116. Refer to SDES, Table 3-9(R), page 11.
34	Miguel Sanchez City of Calexico	Comments same as those presented in Letter No. C-11 (Table 2-1F).	See response to comments of Letter No. C-11 (Table 2-1F).
35	Richard Mitchel Imperial County	Agriculture - Impact to prime farmland. Proposed action inconsistent with the Transmission Corridor Element of Imperial County General Plan. Recommends that mileage shown for agricultural impacts in DES Table 3-9 Routes 2 and 3 of Link 9 (Set IX) be reviewed and adjusted. Requests decision regarding availability of Set IX, Route 3 from Navy Department in Washington, D.C. Recommends that all possible alternatives to impacting agricultural land be reviewed before approval of the final route.	Refer to Response No. 4. We recognize the inconsistency, but we believe the preferred route has the least cumulative impacts. We believe the mileage shown is accurate. Letter No. C-33-s (Table 2-5F) presents Navy's position. Refer to comment of Speaker No. 33. SDES and FES respond to issue.
36	James Bucher	Requests that route avoid irrigated areas. Agriculture - Impact to prime farmland. Soil liquefaction along banks of Holtville Drain. EIR not concerned about soil liquefaction along Holtville Drain.	Alternative routes avoiding irrigated areas were evaluated but found to have greater overall impacts and significantly greater costs. Refer to Response No. 4. Preferred route does not follow Holtville Drain. Refer to SDES, Appendix G, page G-7s.
37	Michael Rood	Preferred route through Imperial County is not route of least impact. The proposed action does not comply with California Civil Code of Procedures, Code 140.030 (not compatible with greatest public good and least private injury). Input from concerned Imperial County citizens given only token consideration. Alternate routes not adequately studied. Opposed to Imperial Valley Substation location. Prefers Keystone Route. States that Keystone Route not adequately studied, is incorrectly drawn (mapped) in document and requests further study. Keystone Route is more efficient route for connection with Imperial County power system. Requests study alternate from Colorado River to the Keystone Route.	We disagree. Code number presented here does not exist. The environmental document evaluates the impact of the proposal and reasonable alternatives. The decision-makers must balance the greatest public good with least public injury. SDES responds to issue. Other substation sites were evaluated in the SDES. We believe the study is adequate. The "Ad Hoc Committee's" Keystone Route is located within the corridor studied and therefore received equivalent evaluation. Additional substation sites studied were suggested by IID. SDES responds to issue. Refer to Appendix G.

Table 2-3F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
38	Fred Hess	DES ignores interconnection of the proposed transmission line with the existing geothermal loop system. Requests study of energy interconnections before final route selection.	Substation Site E was studied as an interconnection with geothermal loop. Refer to SDES, Table 3-9(R), page 12. In addition, a substation site at Mesquite Lake was considered. Refer to SDES, page G-8s.
39	Stanley Scaroni	The environmentally preferred route is not the route of least impact to agricultural lands, homes and cities. Requests consideration of a route with least impact to cities and homes. Agriculture - Impact to prime farmland.	We believe the environmentally preferred route has the least cumulative impact. That has been a primary concern throughout the study. SDES responds to issue. Refer to Response No. 4.
40	Olivia Woegner Imperial Valley Chapter of California Women for Agriculture	Preferred and Keystone routes inconsistent with Imperial County General Plan. DES route inconsistent with Keystone Route alternative route designated by "Blue Ribbon Committee" in Imperial County. Amount of agricultural land affected along Links 130, 136 and 132 is overstated. The corridor on the east side of the valley should on the east side of the canal and out in the desert. Link 132 should be along the Haltville Drain far about nine miles. Suggests locating substation to interconnect conveniently with the geothermal loop. Prefers location on east side of East Highline Canal. Suggests locating right-of-way adjacent to existing roads, canal and property lines and locating towers at ends or corners of agricultural fields. Diagonal alignments should be avoided. Agriculture - Impact to prime farmland and farming operations. Prefers single steel-pole structure production loss would be minimized, farming operations eased and inadequate coverage reduced. Suggests lighting towers near airports, airstrips and throughout agricultural area to aid aerial applications at night. Objects to emphasis of ecological impacts over impacts to humans.	See response to similar comments presented by Speaker No. 35. SDES corridor studies respond to issue. Refer to SDES, Appendix G. We believe the figures representing affected agricultural land are accurate. The study corridor is on the east side of canal. A route along Haltville Drain was studied. See SDES, Appendix G. See response to similar comment presented by Speaker No. 38. The Applicant intends to comply to the fullest extent possible. Refer to SDES, Table S-1, Generically Committed Mitigation, No. 8. Refer to Response No. 4. Refer to Response No. 4. Refer to Response No. 9.
41	Betty Lear	Suggests using alternate route through Blythe and Beaumont-Banning area.	Refer to response to comments of Speaker No. 8.
42	Earl Brinkman Imperial County Farm Bureau	Agriculture - Impact to prime farmland. Property value.	Refer to Response No. 4. Refer to Response No. 2.
43	Mari Hurley Imperial Valley American Association of University Women	Growth - Study does not address impacts to Calexico and Heber. Suggests reevaluation of social and economic land-use (particularly urban population) to include land adjacent to study corridor. Keystone Route inconsistent with Imperial County "Blue Ribbon Committee." Should be realigned to parallel Haltville Drain far nine miles to avoid eastern agricultural land. Suggests further study to extend Link 136 north to avoid expansion of military range. Report should describe the interconnection with IID, the geothermal collector system and the Mexico system. Document does not adequately describe the cumulative effects of ancillary facilities, 161kV line, substations or microwave towers, or location of 161kV transmission line. Ancillary facilities not identified on maps. Agriculture - Impact to farming operations. Suggests use of single steel-pole tower structures.	We believe the impacts have been adequately assessed. The land use studies included land adjacent to the corridors. Refer to Response No. 3. SDES documents corridor studies that respond to issue. This route along Haltville Drain was studied in the SDES. We know of no expansion of the military range and extension of Link 136 would place the transmission line on the military range. IID suggested the substation sites to integrate the systems. The Mexican connection is not part of the proposed action. SDES responds to issue. Refer to Response No. 4.
44	Jock Strabel	Opposed to route across farmland.	Your comment has been noted and will be considered in the final decision.
45	Ray Rood	Inadequate study of alternate routes across and around Imperial County. Impacts of preferred route inadequately examined. Preferred route is not route of least impacts.	SDES responds to issue. We believe impacts of environmentally preferred route were adequately examined and is the route of least cumulative impacts.
46	Marselo Menvielle Farm Bureau of Imperial County	Document incomplete because alternative routes to Colorado River diagonally across Imperial Valley were not studied. Agriculture - Impact to prime farmland and farming operations. Recommends use of single-pole tower structures. Document presents inaccurate classification of soils. Imperial silt-clay saline soils occur in Keystone Road-Mesquite Lake area. Because the land with this soil is considered marginal and produces poor crops, a corridor could pass through area with less impact to agriculture.	SDES responds to issue. Refer to Appendix G. Refer to Response No. 4. There is in the westernmost portion of Link 132 approximately 0.1 mile of soil previously categorized as Class VII. The Soil Conservation Service indicates that when such soil is developed for irrigated agriculture, the category is upgraded to Class III or IV. Based on available information for this area, the Class VII soils found along the western portion of Link 132 were upgraded to the Class III category. We believe the agricultural impacts were adequately addressed.

Table 2-3F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
46 (cant)	Marscia Menvielle Farm Bureau of Imperial County	Suggests further study of a route crassing the desert diagonally from the Colorado River (Links 128 or 111) west to northeast corner of Link 132.	SDES responds to issue.
47	Phil Dotts	Opposed to Keystone Route and any route that crosses farmland. Electrical effects - Hazard from induction.	Your comments have been noted and will be considered in the final decision. Refer to DES, Appendix E, and Response No. 1.
48	John Menvielle	Opposes southern route and suggests using Key- stone Route or other route. Agriculture - Impact to prime farmland (crosses 22 miles of farmland and diagonally crosses 42 acres of Menvielle property) and farming opera- tions.	Your comments have been noted and will be considered in the final decision. Refer to Response No. 4.
<u>El Cajon (San Diego), California - 7 October 1980</u>			
49	Steve Sachs Comprehensive Planning Organiza- tion	Supports proposed Project. Project consistent with CPO regional energy plan.	None
50	A. W. Snively Jamul-Dulzura Community Planning Group	Opposes route through Dulzura, Barrett and Jamul areas. Prefers International Border route. Document shows more concern for ecological environment than human values.	Refer to DES, Chapter 3 (page 3-27) and SDES, Appendix G (page G-9s). Refer to Response No. 9.
51	Michael Spata United Enterprises	Same concerns presented in Letter No. C-49 (Table 2-2F).	See response to comments presented in Letter No. C-49 (Table 2-2F).
52	E. H. Talloferro	Property value - Compensation. Objects to emphasis of ecological impacts over impacts to humans.	Refer to Response No. 2. Refer to Response No. 9.
53	Michael Cooper	Electrical effects. Inadequate notice of meetings and due process denied. Requests delay in hearings in order to build de- fense case. (Petition submitted with 390 signa- tures).	Refer to DES, Appendix E, and Response No. 1. We believe our notices on the scope of com- ments and agencies responsible strictly con- formed to the requirements of CPUC and BLM. In addition to the required notices, we also issued press releases to the media in California and Arizona. Request for delay noted.
54	Pat Tachtrap	Electrical effects - Health and safety. Property has existing right-of-way crassing it. Requests explanation of legal property rights to prevent a second line.	Refer to DES, Appendix E, and Response No. 1. Legal property rights along the route of the proposed 230kV transmission line will not change since the line would be constructed within an existing easement.
55	Sam Dawson	Questions feasibility of continuing border route from Link 144 to Miguel-Tijuana route. Will document reflect new CFM 111 instead of CFM 11? Suggests conservation through peak-load cycling. Impacts to Old Stage Road. How was Tecate Peak determined sacred? Electrical effects - Health and safety, audible noise. Objects to emphasis of ecological impacts over impacts to humans.	Refer to DES, Chapter 3 (page 3-27) and SDES Appendix G (page 3-9s). SDES reflects BR 111. See SDES, page 3-3s and Response No. 5. No major impact to the nineteenth century stage road was identified since route is altered in that area. As stated on page 4-60 of the SDES, "Methods used in conducting the Native American cul- tural resource studies included archival re- search, Native American contacts and ethno- graphic research, including field reconnais- sance." Refer to DES, Appendix E, Response No. 1. Refer to Response No. 9.
56	Steven Finz	Visual and aesthetic impacts to unspoiled rural area of natural beauty.	We agree that there would be significant visual and aesthetic impacts.
57	Richard Magaffin	Electrical effects - Health and safety. Con- cerned about biological effects on swine at hog ranch adjacent to proposed route. Proposed transmission line would cross Magaffin property and remove one residence. Impact to old stage coach route currently used by landowners; would destroy access to properties. Questions need for proposed Project. Suggests following alternate route on public land avoiding private property. Questions feasibility of using existing fire- break along International Border.	Refer to DES, Appendix E, and Response No. 1. Environmental document was a corridor anal- ysis. The final alignment is negotiable with the Applicant. A moderate impact to the nineteenth century stage road was identified. We do not anticipate change of existing access. Refer to SDES, Chapter 1. Refer to Response No. 8. This route was evaluated in the same detail as other routes in the Dulzura area and was found to have greater environmental impacts than the environmentally preferred route. Refer to SDES, Appendix G, page G-9s.
58	Laurel Gray	Questions location of proposed route with respect to residence on Samermant in El Cajon.	The Gray residence on Samermant in El Cajon is approximately 3.4 miles south of the right-of-way for the proposed 230kV trans- mission line.

Table 2-3F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
59	Fern Southcott California Tribal Council	Will submit comments in written form. (No comments received.)	None
60	Robert Colifano Eucalyptus Hill's Landowners Association	Not opposed to proposed Project, but opposed to transmission line near residences. Suggests routing alignment one mile from residences. Electrical effects - Health and safety, audible noise, TV/radio reception interference. Property value - Visual impact. Aesthetic impact.	Your comment has been noted and will be considered in the final decision. Refer to Responses Nos. 8 and 12. In addition, see response to similar comment presented in Letter No. C-39 (Table 2-1F). Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. We agree that there would be significant aesthetic impact.
61	Gregory Marshall	Aesthetic impact. Electrical effects - Health and safety, audible noise, TV/radio reception and communication interference. Existing lines will pick up the proposed lines noise and reradiate the noise. Suggests underground construction of transmission line.	See response to similar comment presented by Speaker No. 60. Refer to Response No. 1. Refer to SDES, Table S-1, Generically Committed Mitigation, No. 10. Refer to Response No. 7.
62	Thone Eddington	Proposed transmission line would bisect Eddington property. Questions width of right-of-way - 360 or 500 feet? Electrical effects - Health, audible noise. Property will be devolved - property will be un-soleable. Opposed to proposed Project.	Environmental document was a corridor analysis. The final alignment is negotiable with the Applicant. SDG&E plans a 200-foot right-of-way. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Your comment has been noted and will be considered in the final decision.
63	Kathleen Lindenmeyer	Opposed to transmission line near family residence. Electrical effects - Health, audible noise. Property values. Aesthetic impacts.	Your comment has been noted and will be considered in the final decision. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. We agree that there will be significant aesthetic impacts.
64	August Krutzsch	Electrical effects - Health and safety, TV/radio reception interference. Property value - proposed development. Use median strip of I-8. Aesthetic impacts.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Refer to SDES, Appendix G, page G-8s. We agree that there will be significant aesthetic impacts.
65	Robert Kirkpatrick	Electrical effects - Health and safety. SDG&E will not shield conductors to reduce radiation because of expense. Property will be valueless. Questions width of right-of-way. Requests that SDG&E buy entirety of Kirkpatrick property.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. SDG&E plans a 200-foot right-of-way. Refer to Response No. 2.
66	William Bretz	Requests one year delay of proceedings for additional analysis. Supports alternative energy technologies (soft energy path) and decentralized power systems. Suggests regional energy self-reliance rather than dependence on imported power. Questions need for proposed Project and recommends other methodologies for projecting future needs besides CFM III.	Request for delay noted. Refer to SDES, Chapter 3, Response No. 5 and response to similar comment presented in Letter No. C-36 (Table 2-1F). BR III was approved and adapted by the California Energy Commission and we believe it best represents future energy needs.
67	Jay Powell Community Energy Action Network	Questions need for proposed Project. Opposes nuclear and coal-fired power and in favor of locally controlled, job-producing energy systems. Electrical effects - Health. Property value - compensation. Recommends utilities pursue alternative energy sources (solar). Suggests delay of hearings. "Where in this decision process is the consumer represented?" "Who has the time and money to research this issue (proposed project) from the perspective of the consumer? Certainly not the PUC." "If the project should cost more than the estimate, who pays? What incentive is there for the utilities to conserve?" "What this document fails to note is the real environment and economic consequences of plugging into coal and nuclear?"	Refer to SDES, Chapter 1. Power generation is outside the scope of this Project. Refer to response to similar comment of Speaker No. 66. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Refer to SDES, Chapter 3, and Response No. 5. Request for delay noted. CPUC represents the consumers' interest in California. The CPUC has this responsibility. The cost of the Project is borne by the utilities and their rate payers. The escalating cost of fuel is incentive for conservation. Coal and nuclear power generation are not part of this Project and therefore, are outside the scope of this analysis.
68	Doug Buckner Sereno Road Committee	Same concerns presented in Letter No. B-44 (Table 2-2F).	Refer to response to comments of Letter No. B-44 (Table 2-2F).
69	Patricio Homlet	Opposed to routing through Wildcat Canyon area. Homlet property is on alternate route for 230kV lines. Questions energy need for proposed Project. Concerned about impact to Stelzer Park. Requests additional hearing.	Alternative routes were studied. Refer to SDES, Appendix G (page G-9s) and Response No. 12. Property crossed is within existing right-of-way. Refer to SDES, Chapter 1. See response to Comment C of Letter No. B-34 (Table 2-2F). Hearings were conducted on the SDES.

Table 2-3F (continued)
Summaries of Comments and Responses

<u>Speaker No.</u>	<u>Name</u>	<u>Issue/Concern</u>	<u>Response</u>
70	Leon Herzog	Proposed alignment crosses his commercial development. Visual and aesthetic impacts. Suggests the proposed route through Borrett Junction area be realigned a mile to north or south.	Additional alternatives were studied and documented in the SDES. We agree that there would be significant visual and aesthetic impacts. SDES documents studies of alternative routes in this area.
71	Rebecca Reel	Recommends use of Banning Pass Corridor. Alternative energy sources (solar). Questions width of easement and number of 500kV lines to be installed. Electrical effects - Health and safety.	Refer to response to comments of Speaker No. 8. Refer to SDES, Chapter 3, and Response No. 5. Only one transmission line is planned on a 200-foot right-of-way. SDG&E has no plans for a second right-of-way. Refer to DES, Appendix E, and Response No. 1.
72	Suzanne Bowen	Questions feasibility of Banning Pass Corridor. What is Connector K? Two towers will be located on property. How will questions be responded to?	Refer to response to comments of Speaker No. 8. Connector K, or Link 144, is the study corridor which passes generally from Jucumbo to Tecate paralleling the International Border. Refer to DES, Figure 3-14. No decision has been made on approval of the Project, specific alignment within the corridor or tower location. Issues and responses are included in this document.
73	Henry Huster	Suggests realigning proposed route to freeway median.	Refer to SDES, Appendix G, page G-8s.
74	Jack Peterson	Who determines the routes - SDG&E, BLM or CPUC? Suggests using fire-break along International Border.	The BLM and CPUC determined the routes to be studied, with input from the utilities and from the public during scoping meetings. The ultimate routing decision will be made by the BLM for public lands, and by the Arizona Power Plant and Transmission Line Siting Committee and the CPUC for private lands in Arizona and California, respectively. See response to similar comment presented by Speaker No. 57.
75	Edith Hunsberger	Questions feasibility of routing proposed line across state land.	Refer to Response No. 8.
76	Leonard Venden	Siting new lines should consider wishes of people affected. Electrical effects - Health. Suggests rerouting proposed line along International Border along freeway. Alternative energy sources (solar).	Opportunity was provided for public input during public scoping and public hearing. Refer to DES, Appendix E, and Response No. 1. Refer to SDES, Appendix G, pages G-8s and G-9s. Refer to SDES, Chapter 3, and Response No. 5.
77	Harry Morel	Proposes border route through Coochama Experimental Forest and suggests using state land. Alternative energy sources (alcohol, solar and/or conservation). Should be regionally self-reliant rather than dependent on imported energy.	Link 146A would cross Coochama Experimental Forest currently managed by the California Department of Forestry (CDF). The CDF cannot convey a right-of-way across the land since a transmission line would be incompatible with a bequest whereby the CDF obtained title to the property. The bequest stipulates that the area is to be used for forestry experiments and managed as a game reserve with no commercial development. Therefore, Link 146A was eliminated from further consideration. Refer to SDES, Chapter 3, and Response No. 5. Refer to response to similar comment of Speaker No. 66.

TABLE 2-4F
SUPPLEMENT DRAFT ENVIRONMENTAL STATEMENT

Written Comments to BLM and CPUC

The following table lists letters in the order received. A total of 80 letters were received in response to the SDES (indicated by "s" in letter number). BLM received 40 letters and CPUC received 40 letters, five of which are duplicates of BLM letters. Letters received through 23 July 1981 are addressed in this document. Letters received beyond that date will be considered in the final decision even though they are not summarized or reproduced here.

Summaries of Letters and Responses

<u>Letter No.</u>	<u>From</u>	<u>Issue/Concern</u>	<u>Response</u>
B-1-s	John Golia	Protests proposed transmission line in residential area. Electrical effects - Health, safety and biological. Recommends rerouting alignment to north of Eucalyptus Hills across public land.	Your comment has been noted and will be considered in the final decision. Refer to DES, Appendix E, and Response No. 1. Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12.
B-2-s	Mrs. John Gallo	Protests proposed transmission line in residential area. Electrical effects - Health, safety and biological. Recommends rerouting alignment to north of Eucalyptus Hills across public land.	Your comment has been noted and will be considered in the final decision. Refer to DES, Appendix E, and Response No. 1. Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12.
B-3-s	Ruth Jenkins	Opposes transmission lines in inhabited areas. Electrical effects - Health. Tower planned 35 feet from Jenkins' home. Property value. Recommends rerouting alignment to north of Lakeside across public land.	Your comments have been noted and will be considered in the final decision. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12.
B-4-s	Esther Van Alstyne	Same comments as those presented in Letter No. B-3-s.	See response to Letter No. B-3-s.
B-5-s	USDI, Bureau of Mines, Intermountain Field Operations Center.	Similar comments presented in Letter No. B-3 (Table 2-2F).	See response to Letter No. B-3 (Table 2-2F).
B-6-s	Mazo Burger	Suggests rerouting alignment to north of Eucalyptus Hills in unpopulated areas.	Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12.
B-7-s	William and Sandro Cheeseman	Electrical effects - Health and safety. Property value. Suggests rerouting alignment to north of Eucalyptus Hills across public land.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12.
B-8-s	Elizabeth Dowers	Electrical effects - Health, safety, biological and television interference. Property value. Will result in rate increases. Suggests routing alignment on public land north of Lakeside.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. There would be no rate increase due to proposed Project. Refer to DES, Chapter 5 (page S-18). Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12.
B-9-s	Jacques-Andre Istel	Opposed to proposed route crossing Pilot Knob Corporation property where a planned community is proposed. Suggests ongoing route to north on government land.	The alternative preferred route in this area (Link 167) as identified in Chapter 1 of this document avoids for the most part the property where the planned community is proposed. Refer to Responses Nos. 8 and 12.
B-10-s	Advisory Council on Historic Preservation, Western Division of Project Review	Specific comments.	Reproduced and responded to in Table 2-5F.
B-11-s	Department of the Army, Los Angeles District, Corps of Engineers	Proposed plan does not conflict with plans of the Corps of Engineers.	None
B-12-s	Arizona Game and Fish Department	Prefers northern environmentally preferred route. If route is chosen, plan construction for minimal interference with Adair Park shooting range.	The route would not interfere with the activities associated with the shooting range.
B-13-s	Shirley Phillips	Property value. Electrical effects - Health and safety. Questions why underground system not considered through Eucalyptus Hills/Lakeside area.	Refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 7.
B-14-s	USDA, Soil Conservation Service	"You stated that the existing and planned land uses within alternative corridors were inventoried. It would appear that prime agricultural land received adequate consideration. However, we could not find a specific reference in this document summarizing the impacts on prime land." "We feel that the Supplement did not deal adequately with provision for erosion control and water management during construction. Particularly, we are concerned with erosion control for the service roads. The SCS is also concerned about the effects of water dis-	We believe that virtually all agricultural land within the study area is prime farmland. Refer to Response No. 4. See response to Comments E and F presented in Letter B-32 (Table 2-2F).

Table 2-4F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
B-14-s (cont)	USDA, Soil Conservation Service	charge from project lands and about the impacts on water quality."	
B-15-s	Fields B. Arthur	Electrical effects - Health, safety and bio- logical. Opposed to proposed route through Eucalyptus Hills. Suggests rerouting alignment through unpopulated area such as Sycamore Canyon.	Refer to DES, Appendix E, and Response No. 1. Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12.
B-16-s	Ann W. Arthur	Same comments as those presented in Letter No. B-15-s.	See response to Letter B-15-s.
B-17-s	James V. Arthur	Same comments as those presented in Letter No. B-15-s.	See response to Letter B-15-s.
B-18-s	David F. and Anita Needham	Agriculture - Impact to farming operations. Property value. Opposed to routing through Dame Valley.	Refer to Response No. 4. Refer to Response No. 2. Your comment has been noted and will be considered in the final decision.
B-19-s	Larry and Carolyn Spencer	Specific comment.	Reproduced and responded to in Table 2-SF.
B-20-s	Department of Energy, NEPA Affairs Division	No comments.	None
B-21-s	Terry and Barbara Thompson	Property value. Electrical effects - Health, safety and bio- logical. As the right-of-way (150 feet) through Eucalyptus Hills area was originally intended to accommodate a 138kV line, wouldn't elec- trical effects be increased because of the larger transmission line (230kV)?	Refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1. Easement documents associated with the existing 150-foot wide right-of-way through Eucalyptus Hills do not specify a maximum voltage level that the right-of-way can be utilized for. Two 230kV power lines would be added to the existing right-of-way. This would increase the maximum voltage from 138kV to 230kV. The voltages of all the lines are not additive. Refer to Response No. 7.
		Suggests underground construction.	
B-22-s	U.S. Department of Health and Human Services, Environmental Health Services Division, Center for Environmental Health	No comments other than those provided in Letter No. B-19 (Table 2-2F).	See response to Letter No. B-19 (Table 2-2F).
B-23-s	Yuma County, Office of the Board of Supervisors	In support of preferred route (using Link 28) traversing Muggins Mountains as approved by State Siting Committee. Opposes Links 29, 30a and 30b.	Refer to Response No. 10. Your comment has been noted and will be considered in the final decision.
B-24-s	U.S. Environmental Protection Agency	No comments other than those provided in DES Letter No. B-32 (Table 2-2F).	See response to Letter No. B-32 (Table 2-2F).
B-25-s	Aaron M. Twite	Electrical effects - Health. Property value. Alternative energy source (solar). Suggests rerouting alignment to State prop- erty in Powoy area.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Refer to SDES, Chapter 3 and Response No. 5. Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12.
B-26-s	USDI, Fish and Wildlife Service	Document adequately addresses the impacts on fish and wildlife resources in Project area.	None
B-27-s	Michael C. Spoto on behalf of Eucalyptus Hills Landowner's Association	Requests one week extension to submit comments.	Request for extension granted. Refer to Letter No. B-36-s.
B-28-s	U.S. Department of Commerce, National Oceanic and Atma- spheric Administration	If geodetic control survey monuments are dis- turbed by Project, must have 90 days notice to plan for relocation.	If a right-of-way is granted, a condition of the grant would include your request for notifica- tion and payment of costs incurred for reloca- tion. If any survey monument, witness corner, reference monument or bearing tree is inadver- tently destroyed, obliterated or damaged, the grantee would be required to have a surveyor reestablish or restore the damage and record the survey in accordance with the Manual of Instructions for the Survey of Public Lands of the United States.
B-29-s	Eucalyptus Hills Landowner's Association	Opposes transmission lines over homes and animal shelters. Electrical effects - Health and safety. Minimal study has been done regarding the environmental impact to Eucalyptus Hills area. Objects to emphasis of ecological impacts over impacts to humans. Suggests route north of Eucalyptus Hills. Proposed Project is beginning of planned expan- sion to 920,000 volts through Eucalyptus Hills.	No permanent structures are located in the existing right-of-way where the proposed 230kV transmission line is planned. Refer to DES, Appendix E, and Response No. 1. We believe the study is adequate. Refer to SDES, Appendix G (page G-9s), and Response No. 12. Refer to Response No. 9. Refer to SDES, Appendix G (page G-9s), and Responses Nos. 8 and 12. See response to Comment A of Letter No. B-14-s.
B-30-s	Form Bureau Women of Imperial County	Specific comments.	Reproduced and responded to in Table 2-SF.

Table 2-4F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
B-31-s	Robert Menvielle	Specific comments.	Reproduced and responded to in Table 2-5F.
B-32-s	William L. Bretz, Ph.D.	Specific comments.	Reproduced and responded to in Table 2-5F.
B-33-s	Arizona State Clearinghouse		
o	Moricopa Association of Government	No comment.	None
b	Moricopa Association of Government Transportation and Planning Office	No comment.	None
c	Department of Transportation, Aeronautics Division	Same as Letter No. B-45a (Table 2-2F).	See response to Letter No. B-45a (Table 2-2F).
d	District IV Council of Governments	No comment.	None
e	Arizona Game and Fish Department	Same letter as B-12-s.	See response to Letter No. B-12-s.
f	Office of Economic Planning and Development	No comment.	None
g	Arizona Natural Heritage Program	No comment.	None
h	Mineral Resources Department	No comment.	None
i	State Land Department	No comment.	None
j	Arizona Power Authority	No comment.	None
k	Agriculture and Horticulture Department	No comment.	None
B-34-s	Imperial Irrigation District Board of Directors	Resolution supporting southern route subject to following conditions: 1. Full market value compensation for right-of-way. 2. Bonus of 25% paid above market value for farmland. 3. Bonus of 50% paid above market value for diagonal crossing. 4. Construct line so highly visible, standard finish conductors and reflective tape. 5. Single-pole towers capable of supporting two circuits between Heber and Colexico.	Specific conditions will be considered. Refer to Response No. 2. See response to similar comments presented in Letter No. C-28 (Table 2-1F). Refer to Response No. 4. Your comment will be considered in the final decision. Double-circuited single-pole towers are not part of the proposed action nor is a second transmission line planned.
B-35-s	California Off Road Vehicle Association	Agrees with proposed action. Document lacks assurances that the transmission line access roads will be open to full variety of "multiple uses" as provided for in the Federal Land Policy and Management Act of 1976.	None If Project is approved, access roads built for this Project would generally remain open. In specific locations, the roads may be closed to protect specific resource values or because of hazards. The BLM recognizes off-road vehicle recreation as a legitimate use of the public lands. At the same time, the Bureau must protect all resources of the land. Bureau planning (e.g., California Desert Conservation Area Plan) attempts to balance the need to use the land and protect its valuable resources. Local BLM offices can provide you with the latest information on which areas have off-road vehicle restrictions.
B-36-s	Michael Spoto and Langley-Cook Engineering on behalf of Eucalyptus Hills Landowners Association	Environmental values must be assigned greater weight than need of Applicant to reduce cost. Locating 230kV transmission line in existing right-of-way in Eucalyptus Hills "would be in contravention with sound judgement and prudent principles of preserving and protecting the human faunal and floral environment." Significant discrepancy between SDG&E's peak load forecasts in DES (Figure 1-2) and projection of four years ago. "Aesthetic impact of the project has not been adequately addressed in the environmental documents." "The SDES claims that the existing line will mitigate the visual impact of the 230kV lines (SDES, p. G-11s)." SDES does not state that the new towers of the 230kV line will be placed adjacent to the existing towers. Towers should have flashing red lights to warn aircraft in area.	Your comment has been noted and will be considered in the final decision. Locating transmission lines within existing right-of-way is consistent with sound planning and results in less impact to the human and natural environment. The SDES incorporates the current projection of SDG&E's peak load and energy forecasts as adopted in January, 1981, by the California Energy Commission. We feel the aesthetic impact of the Project has been adequately addressed. The SDES makes no such claim. The SDES (page G-11s) explains that "building a second line in an existing transmission right-of-way... would have a lower visual impact as a result of existing transmission structures similar in size and configuration to those proposed for the 230kV line..." also a lower visual impact resulting from soil erosion and scarring "due to the presence of access roads..." along the existing right-of-way. The new towers would be placed adjacent to existing towers unless topography prohibits such placement. The Project would conform with applicable FAA standards and regulations as stated in SDES,

Table 2-4F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
B-36-s (cont)	Michael Spato and Longley-Cook Engineering on behalf of Eucalyptus Hills Landowners Association	<p>"Not only must the incremental impact be addressed, but the cumulative impact be identified. The proper approach here is to ...try to lessen the impact of the existing line."</p> <p>Recommends an alternative route to north of Eucalyptus Hills. Recommends underground construction of new 230kV line and existing line through Eucalyptus Hills. Electrical effects - Audible noise (noise levels will be in violation of San Diego County noise ordinance).</p> <p>Safety (no ongoing program identified in document to assure mobile homes in Lakeside area are grounded; hazards of fuel ignition, kite flying, fires, electrocution), biological effects, TV/radio reception interference.</p> <p>Recommends further study of electric effects.</p> <p>Appendix E author not identified. Contrary to NEPA and may be biased.</p>	<p>Table 5-1, Generically Committed Mitigation, No. 7.</p> <p>The "cumulative impact" identified here would result from the proposed 230kV line and the existing 138kV line. The 138kV line is existing and has no impact; therefore, it is described as part of the existing environment in the DES. "To lessen the impact of the existing line" is outside the authority of the CPUC and BLM. Refer to SDES, Appendix G (page G-9s), and Response No. 12. Refer to Response No. 7.</p> <p>Audible-noise levels would not be in violation of San Diego County noise ordinances. Engineering calculations by the Applicant indicate that maximum noise-levels at edge of right-of-way under foul weather conditions in the Eucalyptus Hills area would be approximately 37 dB(A).</p> <p>During the construction period grounding of permanent structures would be accomplished in accordance with mitigation measure No. 13 of SDES Table 5-1, Generically Committed Mitigation. Post-construction structure additions in the vicinity of the right-of-way would be the responsibility of the builder and the local building inspector for appropriate grounding of facilities. Any nuisance complaints directed to SDG&E would be handled on a case-by-case basis. Hazards of fuel ignition are addressed in DES, Appendix E. Kites are typically constructed with nonconductive materials such as wood, paper, mylar (plastic) and yarn. Kites using foil tails, lightweight metal frames, and wire control-strings or string with metallic thread could pose a hazard. Kites should not be flown in the vicinity of electric lines. Also, no attempt should be made to remove a kite caught in electric lines or in tree branches near electric lines. Instead the utility company should be notified. Extreme caution should always be exercised when flying kites or participating in any type of recreational activity in the vicinity of power lines and structures. Easements acquired by SDG&E include the right to trim and/or remove brush and trees within the easement and adjacent thereto when in SDG&E's judgement their growth poses a safety or operational hazard. SDG&E patrols its easements and does trim or remove trees and brush that grow too close to transmission line conductors. See response to Comment I of Letter No. C-49. To reduce the hazard of electrocution, SDG&E's existing towers in the Eucalyptus Hills area are equipped with barbed wire anti-climb barriers. The proposed 230kV line would also be equipped with such barriers as part of the design. Biological effects are adequately addressed in Appendix E of the SDES. Detailed field investigations of AM/FM radio and TV signal strengths were conducted on 12 August 1981 in the Eucalyptus Hills area by SDG&E at the intersections of Valle Vista Rd., Moreno Avenue and Oak Creek Rd. with the right-of-way. Site readings were taken at the edge, 100 feet north and 200 feet north of the right-of-way. Results indicate that only two FM radio and two TV samples at the edge of the right-of-way at Oak Creek Road were unsatisfactory. Interference at this site is believed to be due to the nearby 12kV distribution line and not the existing high-voltage transmission line. The proposed double-circuit 230kV transmission line is not likely to have a significant degrading effect on radio or TV reception. Complaints of line-generated radio or TV interference would be rectified on a case-by-case basis. Typical mitigation measures that would be applied include cleaning insulators, tightening line hardware, relocating customers' antennae, and installing high-gain or directional antennae. Refer to DES, Appendix E, and Response No. 1.</p> <p>In preparing Appendix E, Arizona Public Service computer terminal was used to search and review abstracts as well as to identify authors and issues. Many of the documents referred to in the abstracts were reviewed. Using the</p>

Table 2-4F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
B-36-s (cont)	Michael Spoto and Longley-Cook Engineering on behalf of Eucalyptus Hills Landowners Association	Proposed action inconsistent with Lakeside Community Plan.	abstracts and other relevant documents, we prepared a draft of Appendix E, which was critically reviewed and substantially revised by BLM and CPUC. The final draft of Appendix E was largely written by the BLM team leader and represents what we believe to be a balanced discussion of electrical effects. Although we recognize the inconsistency, the extent to which existing and/or planned electric transmission-line rights-of-way and facilities are included in state or local plans is determined by appropriate agencies in conformance with applicable laws. Prior acquisition of easements and construction of existing facilities has established the land use as a transmission right-of-way. Pursuant to NEPA regulations and CEQA guidelines, BLM and CPUC have invited and received comments from the County of San Diego on both the DES and SDES. The County did not identify any inconsistency between the proposed Project and its general plan.
B-37-s	USDI, Fish and Wildlife Service	Specific comments.	Reproduced and responded to in Table 2-SF.
B-38-s	John and Kathleen Bradshaw	Opposed to transmission line through Eucalyptus Hills/Lakeside area. Electrical effects - Health, safety and environmental problems for wildlife. Aesthetic impacts. Property value - Visual. Will result in rate increases.	Refer to SDES, Appendix G (G-9s), and Response No. 12. Refer to DES, Appendix E, and Response No. 1. We believe this has been adequately assessed. Refer to Response No. 2. There would be no rate increase due to proposed Project. Refer to DES, Chapter 5 (Page S-18).
B-39-s	Cliff Hurley	"...there was inadequate notice to the public in California concerning the written comments, Review and Comment Hearings, and the Adjudicatory Hearings...The notice of written comment periods omitted the description of the scope of the comments to be sent to the BLM and CPUC..." "...separating the SDES information from the DES for purpose of comments or testimony created an artificial barrier..." Rights to participate have been violated because NEPA issues were excluded from certification hearings. As lack of proper notice by agencies, assumes his late comments will be included in final. The EIS does not comply with NEPA regulations 1506.1(a)(2) because the agency has limited the choice of reasonable alternatives.	We believe our notices on the scope of comments and agencies responsible strictly conformed to the requirements of CPUC and BLM. In addition to the required notices, we also issued press releases to the media in California and Arizona. Although we stated in the cover letter of the supplement, "We would appreciate receiving your comments on the adequacy, completeness and accuracy of this supplement by June 26, 1981," we have not limited comments to the supplement. We disagree. The objectives of the combined BLM/CPUC environmental document were to reduce paperwork, delay and expense by eliminating duplication and integrating public consultation and coordination efforts. In addition to the four scoping meetings, seven public hearings were conducted jointly to receive comments on the draft and the supplement. BLM did not participate in the CPUC Certification Hearings, as these hearings were a requirement solely of the California Commission. The right of the people to inquire of BLM was not denied or abridged in any way. We disagree that there was not proper notice--see response to first comment above. Although the letter was received over two weeks after the closing date for comments, it has been accepted as has your letter B-40-s. In accordance with the CEQ Regulations for Implementing the Procedural Provisions of The National Environmental Policy Act, part 1502.14, we have rigorously explored and objectively evaluated all reasonable alternatives, and have briefly discussed reasons for eliminating alternatives from detailed study; part 1506.1(a)(2) of the CEQ regulations states "until an agency issues a record of decision as provided in 1505.2 . . . no action concerning the proposal shall be taken which would limit the choice of reasonable alternatives." We have taken no action to prejudice or foreclose any choices and therefore not in noncompliance.
B-40-s	Cliff Hurley	Explanation of written comment procedures for the EIS was defective. "...Interested Parties were not sent "proper announcement of the separate review and comment procedures" nor "proper notice from BLM for the comments that were appropriate for their procedures," i.e., that NEPA comments must be sent to BLM." "At the closing of the Adjudicatory Hearing, it was established that briefs could be filed through August 31, 1981....Therefore, the public participation process shall exist through August 31, 1981 for CPUC purposes."	We disagree. See response to first comment of Letter No. B-39-s. The public comment period need not correspond with the filing of the briefs. A brief is simply a summary of an argument based on previous testimony and presents no new information.

Table 2-4F (continued)
Summaries of Letters and Responses

Letter No.	Fram	Issue/Concern	Response
C-1-s	Glenn Paxton	Prefers Border route in Tecate area and believes discussion in SDE5 of International Border route inadequate. "If the routing were maintained on or very near the International Border through the community of Tecate, it would have much less residential and environmental impact." Suggests that present technology could be employed to develop Border monitoring system that would use energy generated by the transmission line. Suggests that "the animals and vegetation can handle the environmental impact a lot better than can people. . ." Recommends routing line over government land instead of private land whenever possible.	We disagree and believe study is adequate. We know of no such technology. Refer to Response No. 9. Refer to Response No. 8.
C-2-s	Marcia Krickhahn	Electrical effects - Health. Visual and aesthetic impact. Power lines should be routed away from residential areas. Should use available route north of Eucalyptus Hills.	Refer to DES, Appendix E, and Response No. 1. We believe that visual and aesthetic impacts were adequately assessed. Refer to SDE5, Appendix G (G-9s), and Responses Nos. 8 and 12.
C-3-s	Esther R. Schmitt	Electrical effects - Health (pacemaker interference double 230kV lines will be as hazardous as single 500kV line in Lakeside area), TV/Radio interference. "What will be done to correct these problems." Aesthetic impacts. Questions possibility of underground construction. Will result in rate increase despite consumer's conservation efforts. How long is Phoenix willing to accept coal-burning pollution to support San Diego area needs? Are the number of towers and lines within an easement controlled?	The cumulative electrostatic and magnetic field strengths at edge of right-of-way due to the planned and existing facilities, are expected to be less than 1.5 kv/m and 0.11 gauss, respectively. The discussion of electromagnetic and corona effects, which is found in the DES, page 5-34, Appendix E, and Response No. 1, apply. See also SDE5, Table 5-1, Generically Committed Mitigation, No. 10. We believe that aesthetic impacts were adequately assessed. Refer to Response No. 7. There would be no rate increase due to proposed Project. Refer to DES, Chapter 5 (page 5-18). Power generation is not part of this Project. The number of towers and lines within an easement are not specifically controlled. However, the design of structures and associated facilities will be in accordance with governing California Public Utilities Commission General Order No. 95.
C-4-s	Anita Hamlet	Specific comments.	Reproduced and responded to in Table 2-5F.
C-5-s	Mr. and Mrs. Jack Benson	Electrical effects - Health. Opposed to routing transmission line through Tecate area.	Refer to DES, Appendix E, and Response No. 1. Your comment has been noted and will be considered in the final decision.
C-6-s	San Diego Voice of Energy	Supports proposed Project.	None
C-7-s	City of Colerico	Same comments presented in Letter No. C-11 (Table 2-2F).	See response to Letter No. C-11 (Table 2-2F).
C-8-s	Imperial County Planning Department	Specific comments.	Reproduced and responded to in Table 2-2F.
C-9-s	Jack Strabel	Proposed route will cross Strabel property and interfere with farming practices. Concerned about personal liability if he were to damage transmission line. Suggests avoidance of agricultural land and reroute over government-owned desert. Electrical effects. (Dangerous to operate near or under transmission line.)	Refer to Response No. 4. The question of liability will be considered on a case-by-case basis in the courts. As such, this issue is not part of the environmental documents. Refer to Response No. 8. Refer to DES, Appendix E, and Responses Nos. 1 and 4. Appendix E indicates the hazard of operating any machinery in the vicinity of electrical lines. Diligence on the part of the operator is necessary.
C-10-s	R. C. Kirkpatrick	Requests map showing specific location of Tecate Route. Electrical effects - Health and safety. Objects to emphasis of ecological impacts over impacts to humans.	SDG&E has responded to Mr. Kirkpatrick's request. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 9.
C-11-s	D. L. C. Obergfell	Inadequate notice of proposed Project. Path of least environmental impact is around or outside agricultural area. Electrical effects - Health and safety (hazardous to operate machinery under lines).	See response to similar comment presented in Letter No. B-15 (Table 2-1F). We believe the environmentally preferred route would have the least cumulative impacts. See response to similar comment presented in Letter No. C-9-s.
C-12-s	A. L. Reed	Opposed to proposed Project. Electrical effects - Health, safety and biological.	Your comment has been noted and will be considered in the final decision. Refer to DES, Appendix E, and Response No. 1.

Table 2-4F (continued)
Summaries of Letters and Responses

Letter No.	From	Issue/Concern	Response
C-12-s (cont)	A. L. Reed	Underground construction.	Refer to Response No. 7.
C-13-s	Cliff Hurley	<p>"...I request that the "overall Process" issues be available for comment and not just the procedures used to develop the SDES."</p> <p>"NEPA and CEQA have created great preeminence for the protection for the federal and state held land..."</p> <p>"The PEA (Proponents Environmental Assessment) procedure is a violation of CEQA as well as the Executive Order 11991..."</p> <p>"...the public has been denied their right to reasonable discovery of the 'Process' and the 'Criteria and Standards used to arrive at the Conclusions.'"</p> <p>Environmental settings used cause human environment to be inadequately considered. Believes urban, rural and open space settings more appropriate.</p> <p>Does not believe substation locations integrated with IID distribution grid or the geothermal loop system.</p>	<p>Where comments on the process, criteria and standards are relevant to the adequacy, completeness and accuracy of environmental analysis they are apropos.</p> <p>The statement is untrue. The environmental studies and analysis were based on resources and land uses, and not on land ownership. The environmentally preferred route is almost 50% public land. Refer to Response No. 8.</p> <p>The comment is vague and unspecific. We believe the environmental documents have complied with the provisions of both NEPA, CEQA and related regulations.</p> <p>We disagree and believe the public has been afforded ample opportunity for discovery in the scoping process, hearings on the draft and supplement, and in the certification hearings conducted by CPUC to consider the application for a Certificate of Public Convenience and Necessity.</p> <p>Our approach was to conduct studies, analyze potential impacts and produce a document which is meaningful and useful to decision-makers and the public. We believe we have been successful in this endeavor as we have not received any oral or written comments that show any significant issues were not considered or analyzed. We agree that other stratification or grouping of resources could be used, but fail to see why they are "more appropriate."</p> <p>See response to second comment of Letter No. C-53.</p>
C-14-s	Imperial County	Same comments presented in Letter No. C-8-s.	See response to Letter No. C-8-s.
C-15-s	Robert Menvielle	Same as Letter No. B-31-s.	See response to Letter No. B-31-s.
C-16-s	Mark N. Osterkomp	<p>Prefers southern route through Imperial Valley. Questions Imperial County Planning Director's statement that Mesquite Lake area unsuitable for agriculture.</p> <p>Suggests compensating landowners with money saved by utilizing southern route.</p>	<p>None</p> <p>Your comments have been noted.</p> <p>Refer to Response No. 2.</p>
C-17-s	Morscio Menvielle on behalf of Farm Bureau Women of Imperial County	Same as Letter No. B-30-s.	See response to Letter No. B-30-s.
C-18-s	Olivia Waegner on behalf of Imperial Valley Chapter California Women for Agriculture	Specific comments.	Reproduced and responded to in Table 2-SF.
C-19-s	Larry and Carolyn Spencer	Same as Letter No. B-19-s.	See response to Letter No. B-19-s.
C-20-s	Terry and Barbara Thompson	Same as Letter No. B-21-s.	See response to Letter No. B-21-s.
C-21-s	U.S. International Boundary and Water Commission	Same as Letter No. C-2 (Table 2-2F).	See response to Letter No. C-2 (Table 2-2F).
C-22-s	California State Office of Planning and Research (Clearinghouse)	No comments.	None
C-23-s	Roderick and Judith Shaffer	Opposed proposed line through Eucalyptus Hills. Recommends use of route to north.	Refer to Response No. 12.
C-24-s	Stephen J. Dakis, Jr.	<p>Proposed transmission line would run directly behind his property.</p> <p>Aesthetic impacts.</p> <p>Property value.</p> <p>Electrical effects - Health and safety, TV/ Radio reception interference.</p> <p>Impacts from dust, noise and trespassers during construction.</p> <p>Opposes line in Lakeside area.</p>	<p>The proposed transmission line is within an existing right-of-way corridor.</p> <p>We believe that aesthetic impacts were adequately assessed.</p> <p>Refer to Response No. 2.</p> <p>Refer to DES, Appendix E, and Response No. 1.</p> <p>Regarding dust, see response to Comment C of Letter No. B-19 (Table 2-2F). Regarding trespassers, see response to Comment C of Letter C-49.</p> <p>Refer to Response No. 12.</p>
C-25-s	Merle Hamlet	<p>Opposed to proposed Project.</p> <p>Pollution from coal energy sources should be addressed.</p> <p>Suggests indepth study of underground construction of 230kV line.</p> <p>Document disregards hazards to forestry aircraft used for fire control.</p> <p>Mapped areas of alternatives and preferred routes in SDES are vague.</p>	<p>Your comment has been noted and will be considered in the final decision.</p> <p>Power generation is not part of this Project.</p> <p>Refer to Response No. 7.</p> <p>See response to Comment D of Letter No. B-34 (Table 2-2F).</p> <p>We believe the maps are adequate. Refer to Response No. 11.</p>
C-26-s	William L. Bretz	SDES does not succeed in correcting serious inadequacies and omissions present in DES.	We believe the DES and SDES documents are adequate.

Table 2-4F (continued)
Summaries of Letters and Responses

<u>Letter No.</u>	<u>From</u>	<u>Issue/Concern</u>	<u>Response</u>
C-27-s	Coup & Smith Architects	<p>Agriculture - Aerial application, Impact to prime farmland. Opposed to proposed transmission line. Proposed action conflicts with Coup & Smith's plans of subdivision, residence and citrus ranch. SDG&E wishes to acquire sufficient right-of-way to allow the construction of a second parallel line. Feasibility of entire line is questionable. SDG&E wants transmission line in order to sell excess power to Mexico. No assured source of power to be transmitted. Electrical effects - Health and safety, TV/ Radio reception interference. Property value - Visual and aesthetic impacts. Potential effects to humans should take greater precedence than effects on wildlife. Suggests routing the transmission line around Imperial Valley.</p> <p>Imperial County is impacted without any benefit.</p>	<p>Refer to Response No. 4.</p> <p>Your concern will be considered in the final decision.</p> <p>Only one transmission line is planned on the 200-foot right-of-way. SDG&E has no plans for second line. We believe the Project is feasible. We have no information to substantiate this claim. See page 3-7f of this document. Refer to Response No. 1.</p> <p>Refer to Response No. 2.</p> <p>Refer to Response No. 9.</p> <p>Alternative routes avoiding Imperial Valley were evaluated but found to have greater impacts to other resources and significantly greater costs. The transmission line is proposed to interconnect the electric-power networks of APS, SDG&E and IID. See page 3-7f of this document and SDES, Chapter 1.</p>
C-28-s	Eucalyptus Hills Landowners Association	Some as Letter No. B-29-s.	See response to Letter No. B-29-s.
C-29-s	Rolph Menvielle	Specific comments.	Reproduced and responded to in Table 2-SF.
C-30-s	Residents of Colexico (Petition, 12 signatures)	<p>Opposed to location of proposed transmission line, if within 5 miles of City of Colexico. Document inadequate. Impacts to Colexico not recognized. Conflicts with Imperial County Transmission Corridor Element. In violation of CEQA. Growth - Inhibit growth of Colexico.</p>	<p>Opposition noted and will be considered in the final decision. See response to Letter No. C-11 (Table 2-2F).</p>
C-31-s	Cliff Hurley	<p>BLM was not a participant in the CPUC proceedings for consideration of a Certificate of Public Convenience and Necessity. "Therefore, the right of The PEOPLE to enquire of BLM as a Joint Lead Agency ("primarily responsible for the review and analysis of environmental impacts") has been denied for the following: - The Environmental Assessment Process used by BLM - NEPA and the NEPA Regulations - Executive Order 11991 - Compliance: - with NEPA and the Regulations - with the Environmental Laws"</p>	<p>Refer to Response No. 3.</p> <p>See response to Letter No. B-39-s.</p>
C-32-s	Community Energy Action Network	Specific comments.	Reproduced and responded to in Table 2-SF.
C-33-s	U.S. Department of the Navy	Specific comments.	Reproduced and responded to in Table 2-SF.
C-34-s	Cathy L. and Gregory A. Hewitt	Specific comments.	Reproduced and responded to in Table 2-SF.
C-35-s	Geoffrey R. King, Ph.D.	Environmental impact would be offset by improved air quality and oil saving. Appears that total benefits substantially exceed costs for the proposed interconnection.	None
C-36-s	Robert J. Colifano, D.P.M.	<p>Electrical effects - Health and safety (line should not be placed near residences). Adverse health effects to humans more important than impacts to vegetation, wildlife and Indian burial grounds. Suggests moving line north of Eucalyptus Hills.</p>	<p>Refer to DES, Appendix E, and Response No. 1.</p> <p>Refer to Response No. 9.</p> <p>Refer to SDES, Appendix G (page G-9s), and Response No. 12.</p>
C-37-s	Charles L. Adams, Ph.D. University of Nevada, Los Vegas	<p>Protests proposed "desecration" of sacred Mt. Tecote with high-voltage transmission line.</p> <p>Aesthetic impacts to Tecote Peak. Proposed action in conflict with legal status of Tecote Peak. Enclosure - Book summary of <u>Cuchoma and Sacred Mountain</u>, edited by Frank Waters and Charles L. Adams.</p>	Potential impacts to Tecote Peak were assessed in Chapter 5 of DES and SDES. The BLM and environmentally preferred route pass north of Tecote Peak.
C-38-s	Frank Waters	<p>Protests proposed transmission line over mountain sacred to Cuchoma (Tecote Peak). Proposed action in conflict with legal status of Tecote Peak. Transmission line through site conflicts with intent of bequest of site as public monument. Concerned about impacts to archaeological sites, ancient Indian shrines, rare plants and trees.</p>	See response to Letter No. C-37-s.

Table 2-4F (continued)
Summaries of Letters and Responses

<u>Letter No.</u>	<u>From</u>	<u>Issue/Concern</u>	<u>Response</u>
C-39-s	Robert Kostko	Recommends bypassing peak. Concerned about archeological resources.	See response to Letter No. C-37-s.
C-40-s	Anthony T. Dunn	Concerned about two alternative routes over Tecate Peak, sacred to Native Americans. Concerned about impact to rare Tecate cypress groves.	See response to Letter No. C-37-s.

Written Comments to BLM and CPUC
Complete Letters and Responses

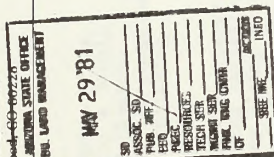
B-10-s

Advisory Council On Historic Preservation

1522 K Street NW
Washington, DC 20005

Reply to:

Lake Plaza South, Suite 616
44 Union Boulevard
Lakewood, CO 80226



May 27, 1981

Mr. Clair M. Whitlock
Arizona State Director
Bureau of Land Management
2400 Valley Bank Center
Phoenix, Arizona 85073

Dear Mr. Whitlock:

Thank you for your request of May 14, 1981, for comments on the supplement to the draft environmental statement for APS/SDG&E Interconnection Project, Arizona and California. Pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969 and the Council's regulations, "Protection of Historic and Cultural Properties" (36 CFR Part 800), we have determined that your draft environmental statement does not contain sufficient information concerning historic and cultural resources for review purposes. Please furnish the following data indicating compliance with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320).

The environmental statement must demonstrate that either of the following conditions exists:

1. No properties included in or that may be eligible for inclusion in the National Register of Historic Places are located within the area of environmental impact, and the undertaking will not affect any such property. In making this determination, the Council requires:
 - evidence that you have consulted the latest edition of the National Register (Federal Register, March 18, 1980, and its monthly supplements);
 - evidence of an effort to ensure the identification of properties eligible for inclusion in the National Register, including evidence of contact with the State Historic Preservation Officer, whose comments should be included in the final environmental statement. The State Historic Preservation Officer for Arizona is Mrs. Ann Pritzlaff and the California State Historic Preservation Officer is Dr. Knox Mellon.

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The Federal Register was consulted during Phase I (regional-scale) and Phase II (corridor-scale) studies to identify eligible or listed properties in the study area. Results are documented in Chapters 4 and 5 of the APS/SDG&E Interconnection Project Environmental Study, Phase II Corridor Studies Volume II, Wirth Associates, Inc., August 1980; Chapters 4 and 5 of the Phase II Addendum, April 1981; Chapter 4 of the DES, August 1980 and Chapter 4 of the SDES April 1981.

Results of records searches and sample field surveys of the study area were used to evaluate relative cultural-resource sensitivity of alternative routes. Documentation of the potential National Register eligibility of identified properties was submitted to the Arizona and California State Historic Preservation Officers on 23 July 1981 and 4 August 1981, respectively. Their comments have not been received in time for inclusion in this document. A determination of eligibility of identified properties will be requested from the Keeper of the Register.

Site-specific effects of the proposed action cannot be determined at this time because no decision has been made on the selection of a final route.

B-10-s (continued)

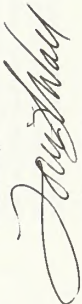
Page 2

Mr. Clair M. Whitlock
APS/SDG&E Interconnection Project
May 27, 1981

2. Properties included in or that may be eligible for inclusion in the National Register of Historic Places are located within the area of environmental impact, and the undertaking will or will not affect any such property. In cases where there will be an effect, the final environmental impact statement should contain evidence of compliance with Section 106 of the National Historic Preservation Act through the Council's regulations, "Protection of Historic and Cultural Properties" (36 CFR Part 800).

Should you have any questions, please call Charles M. Niquette at (303) 234-4946.

Sincerely,



Louis S. Wall
Chief, Western Division
of Project Review

B-19-s

June 10, 1981

Larry and Carolyn Spencer
11916 Serena Road
Lakeside, Calif. 92040

Stan Wagner
Bureau of Land Management
Arizona State Office
2400 Valley Bank Center
Phoenix, Arizona 85073

Dear Mr. Wagner:

As a property owner and resident of Eucalyptus Hills, I am very much concerned about the installation of a double 230kV line that is proposed by San Diego Gas and Electric (APS/SDG&E Interconnection Project.) I have read the Supplement to the Draft Environmental Document and have the following comments, and questions.

A [The electromagnetic field of the double 230kV in operation is equivalent to a 500kV transmission line, emitting radiation that poses serious health and fire hazards for any living thing within 1000 feet of the line. This was documented by Dr. Beck in the November P.U.C. hearings. SDG&E is also planning to add a 69kV and to replace within two years an existing 138kV with another double 230kV in the same right-of-way. This adds up to 989,000 volts. This additional 230kV was recently disclosed by Mr. Nelson of S.D.G.&E.

B [As the name of our area implies, we are a densely wooded area of highly volatile Eucalyptus trees. As an example, my property is 1.3 acres on which stand over 120 mature trees, many 50 years old and over 100 feet tall. The utility right-of-way is only 150 feet and I feel, not adequate to insure that we will be able to preserve our unique residential area from fire hazards. A 2000 foot easement would be adequate, possibly, but unfortunately it is not available. The operation of this high voltage would potentially cause a substantial adverse change and stress to this unique environmental resource.

C [There are approximately 80 homes situated within 1000 feet of the proposed line in Eucalyptus Hills. There are over 800 homes situated north of the line. As this line crosses all of the southern accesses into our area, draping only 40 feet from the surface of the road, our people feel cut off by it. The health problems that this line will create are a serious threat to all of our lives. Radiation from high voltage causes birth defects, cardiac fibrillation, electric shocks and stress.

D [We are concerned with adverse visual and aesthetic impacts and subsequent devaluation of our property because of the additional lines and towers. They are devastating to the beauty of any residence, community and open space. The Eiffel tower represents them in art form as the celebration of 19th century technology. But now, erected across our open spaces,

A [The statement that "the double 230kV in operation is equivalent to a 500kV transmission line" is incorrect. To clarify the issue, two 230kV power lines would be added to the existing right-of-way. This would increase the maximum voltage from 138kV to 230kV. The voltages of all the lines are not additive.

B [Regarding fire hazards, see response to Comment I of Letter No. C-49 and Comment D of Letter No. B-34 (Table 2-2F). We see no reason to extend an easement to 2000 feet.

C [Refer to DES, Appendix E, and Response No. 1.

D [Refer to Response No. 2.

E [We believe this is a fallacy.

B-19-s (continued)

they have become an iron clad phallic symbol of a power that entangles us in its tendrous web encompassing us from every direction. Help us dispense with these archaic monsters and let us get on with the more modern means of the present century. Let's initiate a project to put all existing and future lines underground. There it can remain strong silent, invisible and harmless. It can be funded by marketing solar water heating systems and photovoltaic systems for individual homeowner's use. I'll be your first customer for a photovoltaic system. I am just installed last December a solar hot water system. I am excited about generating my own energy. I could sell my excess to SDG&E to bank for overcast days. You must admit that this idea would be in keeping of the new national policy of oil independency and SDG&E could stop paying fines for not pushing conservation. If S.D.G.&E did the marketing and installation, perhaps their stockholders could be finally satisfied. Best of all, everyone could feel good about it!

Would you please tell me:

1. What is San Diego County's actual energy need and how much of this nearly 1,000,000 volts are earmarked for sale?
2. According to T3-2(R) in the Supplement to the Draft Environmental Document (SDED), SDG&E claims that there is potentially 100 megawatts from solar, 100 megawatts from geothermal and 180 megawatts from purchases from Mexico by 1988. Why do we need the Interconnection Project?
3. Is it true that the above energy sources are cleaner cheaper and consistent with the national goal than imported coal produced energy?
4. Why both Environmental Impact Reports on the Interconnection Project failed to consider Eucalyptus Hills residents as "highly impacted"?
5. Why the these same reports stress potential significant unavoidable adverse impacts of the environment of the Andrew's scarab beetle, unique plant species, magic gecko, flat-tailed horned lizard, bighorn sheep and raptor nesting areas, yet claim that there is no substantial evidence that high voltage will cause adverse effects to humans?
6. Is it considered encroachment for a utility to run 989,000 volts along an easement given initially for 138,000 volts? Is a 150 foot right-of-way inappropriate?
7. Will SDG&E be liable to relocate if necessary, residents affected by high voltage? Pay damages?
8. Why can't it be required by law that all transmission lines over 138kv be put underground?
9. Why is it not required by law that utility companies offer for sale solar and photovoltaic systems?
10. Did the Bureau of Land Management consult with the State Historic Preservation Officer about the preservation of the Eucalyptus trees in Eucalyptus Hills?
11. Would you recommend that an environmental impact study be made on the Eucalyptus Hills as a supplement to the former studies?

- F Electric-energy sales to customers for 1981 are projected to be approximately 10 billion kilowatt-hours and are expected to increase to 12.2 billion kilowatt-hours in 1988.
Electricity presently contracted for importation over the proposed APS/SDG&E Interconnection Project will be consumed by SDG&E customers.
- G The proposed Interconnection Project will permit SDG&E to reduce oil consumption by an average of 5.6 million barrels of oil per year, a direct saving to the ratepayers of over \$100 million a year.
As indicated in Table 3-2(R) of the SDES, and the accompanying discussion, SDG&E estimates that by 1988, a total of 95 megawatts of power could potentially be added from solar photovoltaic cells and additional Imperial Valley and Mexican geothermal resources. Of these resources, only 25 megawatts of solar photovoltaic cells is expected prior to 1988.
These resources, while they have a place in the long-term resource mix, will not have the immediate effect of reducing SDG&E dependence on oil and gas. The line is also needed to import geothermal energy, and purchases from New Mexico and Arizona.
All of the energy sources you list are consistent with energy independence. Solar energy, while certainly cleaner than coal, is presently limited in its application, particularly with respect to the generation of electricity, and is considerably more expensive.
Geothermal energy has its advantages but is not yet a locally reliable energy source, as it is still in the developmental stages in the Imperial Valley. It, too, is a more expensive energy source than coal.
Coal is one of our country's most abundant and readily available energy resources. Although it has some unique environment difficulties, modern control technologies help to reduce the impacts to manageable levels. Coal is less expensive than the other sources mentioned and, through the remainder of the century, coal is expected to play a major role while other power sources are developed.
- H

B-19-s (continued)

I	<p>The environmental consequences associated with the proposed 230kV line are highlighted in Table 3-9, page 5 of 5, of the DES under Alternate Route, Connector N (Link 151). These consequences, or residual impacts, are derived by a process that first identifies and evaluates the initial impacts, and then applies appropriate mitigation.</p> <p>Based on public response to the DES, the SDES includes discussion of the environmental consequences of locating the 230kV line in an existing right-of-way with existing facilities versus opening and utilizing a new right-of-way. This discussion can be found in Appendix G of the SDES. It is important to note that Eucalyptus Hills has developed around existing lines. The use of the existing right-of-way is preferred, because opening a new one would have greater impacts on human as well as cultural and natural environmental resources. See also Response No. 12.</p>
J	<p>The human environment is not treated lightly. Significant unavoidable adverse impacts occur in all three broad categories as highlighted on page 5-43 of the DES. The DES and SDES were objectively prepared to assess impacts in the human, cultural and natural environment. The impacts that occur to these animals, which exist in limited numbers and are given protected status by our state and Federal governments in an effort to prevent their extinction, are from increased land-use and related impacts, not from electrical effects. See Response No. 9.</p> <p>The proposed 230kV line will be designed and constructed in conformance with state and national safety codes to ensure public safety.</p>
K	<p>No, it is not. See response to Comment A above.</p> <p>The 230kV lines proposed to be located in the existing right-of-way will comply with the design criteria of the California Public Utilities Commission General Order 95 within the 150-foot right-of-way.</p>
L	<p>See response to Comment A of Letter No. B-19 (Table 2-2F).</p>
M	<p>Among the power granted the Public Utilities Commission by the Legislature is the authority to establish design and safety criteria for construction of facilities. The CPUC could require undergrounding of electric transmission facilities if, after investigation, it found good cause. Factors to be considered include technical feasibility, environmental consequences and economics, which would be compared to potential impacts that may be reduced by undergrounding. Refer also to Response No. 7.</p>
N	<p>Again, the Public Utilities Commission has the authority to require that utility companies take certain actions if, after investigation, it finds good cause.</p> <p>The CPUC has, for example, required utilities to initiate certain conservation programs. The same could be done for solar technologies including photovoltaics.</p> <p>The CPUC is currently investigating the role public utilities should have in marketing active solar equipment and has in the meantime prohibited such marketing based on allegations that allowing utility companies to sell solar equipment would monopolize the market.</p>
O	<p>The land in the Eucalyptus Hills area does not fall under Bureau of Land Management jurisdiction. Eucalyptus trees would probably be considered a natural resource, not a cultural resource, and are therefore not under the purview of the State Historic Preservation Officer.</p>
P	<p>No. We believe that the DES and SDES have fully considered the impacts of the proposed transmission line and comply fully with provisions of the California Environmental Quality Act and the National Environmental Policy Act.</p>

B-19-s (continued)

Page 3

- Q** [12. The SDED claims that Solar technologies such as photovoltaic processes will not be economically competitive with conventional sources within the time-frame of the need (1984-1988). Do you agree with that statement?
- R** [13. What kind of electromagnetic and corona effects can we expect on property adjacent to a 150° easement where 989,000 volts are running?
- S** [14. What kind of noise level can we expect? According to the SDED 3-26a, a 500kv line at the edge of a 200 foot right-of-way will be designed to limit audible noise to 33dBA during fair weather and 57dBA during foul weather.
- T** [15. Although thousands of people will come into daily contact with the effects of the proposed lines through Eucalyptus Hills the SDED calls this area an "environmentally preferred" route because of the existing 150' right-of-way. Do you agree?
- U** [16. Is it true that the biological effects, as well as audible and visual effects of high voltage lines could be eliminated by putting them underground?
- V** [17. Do you agree that if there is any degree of uncertainty that the corona and electromagnetic effects of the proposed lines are safe for humans or that they may cause adverse biological effects that they should not be installed where people will come into daily contact with the effects?
- I would appreciate you answering any part of these above questions. Several residents in the area have organized a committee of the Eucalyptus Hills Homeowners Association called Eucalyptus Hills Voices Against Transmission Lines for the purpose of keeping the residents of our area informed. Any information that you can offer will be shared and greatly appreciated by all.

Thank you,

Larry and Carolyn Spencer
Larry and Carolyn Spencer

- Q** [Yes. Solar is expected to be very expensive, even in that time period. As indicated in response to Comment H, coal-fired energy purchased from sources in Arizona and New Mexico is expected to be much less expensive during the 1980s than energy from solar photovoltaic cells.
- R** [The transmission voltage proposed for the existing 150-foot-wide right-of-way is 230kV. The cumulative electrostatic and magnetic field-strengths at the edge of the right-of-way caused by the planned and existing facilities are expected to be less than 1.5kV/m and 0.11 gauss, respectively, which is less than many household appliances. The discussion of electromagnetic and corona effects, which is found in the DES beginning on page 5-34, and more fully addressed in Appendix E, applies. Refer also to Response No. 1.
- S** [As you may know, the County of San Diego has on adopted noise ordinance. This ordinance has specific noise-level criteria for transmission lines with which SDG&E must comply. Noise levels of the edge of the right-of-way for the proposed 230kV lines are expected to be less than the 33 dBA and 57 dBA, which is expected for the 500kV. These levels are within standards set to protect hearing and to prevent undue disturbance. They should usually be inaudible since ambient noise-levels under these conditions are normally higher. Refer to SDES, Appendix E, Table 2-1A.
- T** [It is unclear what is meant by "thousands of people will come into daily contact with the effects." These effects are principally land-use and visual. Use of an existing right-of-way, if it can spatially accommodate additional facilities, certainly has merit from a land-use point of view, since it minimizes additional visual impacts and commitment of land.
- U** [No. Undergrounding would reduce visibility and audible-noise effects. Visual effects, however, would still occur to some extent, as would effects on cultural and natural resources. Biological effects are not established for overhead or underground EHV lines at this time. Construction would involve extensive ground clearing, trenching and backfilling operations similar to those of pipeline construction. After construction, access to the underground cables over their entire length would be required for maintenance and repairs. Many of the trees in the existing right-of-way would have to be removed to construct underground, which would not have to occur for overhead construction. Refer to Response No. 7.
- V** [The studies on the effects of human exposure to corona discharge and electromagnetic fields at the level of design standards of the proposed transmission line, have suggested that no significant adverse effects will occur.

B-30-s

COMMENTS

Comments on the Supplement to the Draft Environmental Document and other documents concerning the APS/SDGE Interconnection Project # A-59575, submitted by Mercie Menzies, of the Farm Bureau Women of Imperial County.

Table 3-9(R) 10 of 13 in the Supplement to the Draft:

Maps of Transmission Lines: (At top of page)

1. Shows Imperial Valley 500KV Alternatives:
Shows Link 129: The map shows only 1 diagonal but in reality there are 3 diagonals.

Diagonal crossings or fields are a safety hazard to aerial applicators.

2. Shows 161 KV, Links D-2 and B-D have 8 right angles.
Right angles in transmission lines are a safety hazard to aerial applicators.

Table: Environmental Consequences: (same page)

Under Agricultural Resources: Link 129
States: "Crosses 22.4 miles, removing 10.14 acres".
This is a fallacy:

Because of inadequate insect control and the loss of property rights being taken by SDGE all land within the right of way will be removed from production which accounts for 543 acres.

Under Visual Characteristics:

No statement is made that Link 129 passes within 1/2 mile of Heber, Calif. This places a growing community inside the critical viewing area.

A [Refer to Response No. 4.

B [Refer to Response No. 4.

C [Estimates of acreage loss because of inadequate insect-control and the loss of property rights within the 200 foot right-of-way appear to be influenced by an unsubstantiated assumption that farming within the 200-foot right-of-way along the transmission-line corridor will be precluded. There has been no indication that SDG&E plans to discourage or prohibit the growing of field, seed or vegetable crops within the transmission-line right-of-way. Neither are there data, observations or reports that would indicate complete, or even significant, crop loss within the right-of-way area due to any factor, including inadequate insect control. The only crop loss likely to occur would be within and around the towers. See Response No. 4.

D [Link 129 passes within one mile of Heber and would result in a significant (high) unavoidable adverse impact as depicted on Figure 5-6 in the DES.

B-19-s (continuc'Y)

Page 3

- Q** [12. The SDED claims that Solar technologies such as photovoltaic processes will not be economically competitive with conventional sources within the time-frame of the need (1984-1988). Do you agree with that statement?
- R** [13. What kind of electromagnetic and corona effects can we expect on property adjacent to a 150' easement where 989,000 volts are running?
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I would appreciate you answering any part of these above questions. Several residents in the area have organized a committee of the Eucalyptus Hills Homeowners Association called Eucalyptus Hills Voices Against Transmission Lines for the purpose of keeping the residents of our area informed. Any information that you can offer will be shared and greatly appreciated by all.

Thank you,

Larry and Carolyn Spencer
Larry and Carolyn Spencer

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B-30-s

COMMENTS

Comments on the Supplement to the Draft Environmental Document and other documents concerning the APS/SDGE Interconnection Project # A-59575, submitted by Mercedes Menzies, of the Farm Bureau Women of Imperial County.

Table 3-9(R) 10 of 13 in the Supplement to the Draft:

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1. Shows Imperial Valley 500KV Alternatives:
Shows Link 129: The map shows only 1 diagonal but in reality there are 3 diagonals.

A [Diagonal crossings or fields are a safety hazard to aerial applicators.

2. Shows 161 KV, Links D-2 and B-D have 8 right angles.

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Table: Environmental Consequences: (same page)

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This is a fallacy:

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D [Link 129 passes within one mile of Heber and would result in a significant (high) unavoidable adverse impact as depicted on Figure 5-6 in the DES.

B-30-s (continued)

- 161kV, Links D-2 and B-D:
1. Under Ecological Resource:
State: "Bird collision hazard because of nearby rookery".
- Why was there no mention of aerial applicator collision hazards under Agricultural Resources?
2. Under Agricultural Resources:
State: "Crosses 1.78 miles.
- There is no way that a line beginning at sub-station site D and ending at the El Centro steam plant can cross only 1.78 miles of Agricultural land when the actual length of the line is 17.5 miles
- In the Environmental Study for Feasibility and Suitability Studies of Alternative Routes by Wirth and Associates Inc.
On page 23 it States: "Hunting activities could potentially present a hazard to the operation of the transmission line".
- I would like to list the hunting activities taking place along Link 129 that have never been mentioned:
- | | |
|------------------------------|----------------------------------|
| Morning and white wing doves | from 9/1 to 9/30 and 11/15- 12/4 |
| Pheasants | from 11/8 to 11/30 |
| Quail | from 10/18 to 1/25 |
| Chukar | from 10/18 to 1/25 |
| Cottontail and bush rabbits | from 7/1 to 1/25 |
| Jack rabbits | all year |
| Bobcat | from 12/11 to 1/15 |
| Ducks | from 10/18 to 1/18 |
| Canada goose | from 10/25 to 1/4 |

Conclusions:

Link 129 crosses some of the most productive of the unique farm land in Imperial County. There will be a loss of production over a 50 year period on approximately 543 acres along the corridor due to inadequate control of insects and weeds, disruption of irrigation and drainage systems, and problems with land preparation and harvesting with large equipment around towers in the fields.

The agricultural area in Imperial Valley is probably at its peak now and will not increase much more due to a limited allotment of water from the Colorado River. The agricultural area is probably decreasing and even more valuable, unique farm land will be taken out of production by Link 129.

Since agricultural land is only 18.2% of the total land area of Imperial County and since agriculture is the major contributor to the economy of Imperial County, the 500kv corridor should not cross the agricultural lands at Link 129 nor should it cross any of the irrigated lands of Imperial County.

- E** [Hazards to aerial applicators were addressed in the DES, Appendix D (page D-19), and Response No. 4.
- F** [Centerline routing of the proposed wood-pole transmission line from Substation D to the El Centro steam plant in fact crosses over only 1.78 mile of crops. Much of the centerline and many of the poles were sited such that they were near field roads but not physically in the cropped portions of individual fields.
- G** [Your comments have been noted and will be considered in the final decision.

B-31-s

Comments on the Supplement to the Draft Environmental Document and the Draft Environmental Document concerning the APS/SDGE Eastern Interconnection Project.

My name is Robert Menvielle and my business address is 1272 E. Jasper Rd. Heber, California, 92249. I was born May 18, 1955, in Brawley, California and I have lived and worked in the Imperial Valley since then.

I hold a Bachelor of Science degree in Agricultural Business Management from California State Polytechnic University at Pomona. My present occupation is that of farmer and farm manager. I have numerous years of experience in the Imperial Valley agricultural community. I have been involved with the production of both field and vegetable crops. I have worked with all types of agricultural equipment and I am familiar with the economics of crop production in this area.

I am familiar with the proposed APS/SDGE Eastern Interconnection Transmission Project, a portion of which would cross through the agricultural heart of Imperial Valley. I have read Appendix D (also known as the "Agricultural Study") of the Draft Environmental Documents and I feel that it fails to adequately study the effects that the proposed link 129

B-31-s (continued)

of the 500 KV line would have upon agricultural property and operations under the transmission corridor.

The following are areas within Appendix D of the Environmental Draft which I feel need to be corrected and studied further.

I Typical Farming Operations:

I want to express my concern for the deficiencies contained in Appendix A of the Agriculture Study entitled Typical Farming Operations and listing in Tables I through XIII the types of operations and types of equipment with equipment dimensions used to grow specific crops. The following are the correct equipment dimensions.

Operation	Equipment	Height (ft.)	Width (ft.)
Subsoil	Subsoiler & Tractor	10.8	11.6
Disc	Disc & Tractor	10.8	21.10
Cross Check	Ridger & Tractor	9.2	14.
Landplane	Landplane & Tractor	10.8	16.
List Beds	Lister & Tractor	9.2	23.
Plow	Plow & Tractor	10.8	9.2
Float	Float & Tractor	10.8	18.
Harvest	Likens Harvester	10.8	80.
Harvest	Self-propelled combine	12.6	22. or 24.
Topper	Feet topper & Tractor	9.2	19.6
Harvest	Feet digger & Tractor	11.9	21.6
Swath	Self-propelled swather	11.	15.6
Bale	Baler & Tractor (small bales)	9.2	11.
Bale	Baler & Tractor (big bales)	12.	13.
Combine			
Windrows	Hay rake & Tractor	9.2	23.

I want to point out that the deficiencies in equipment dimensions listed above are important because they affect the maneuverability of these agricultural machines within the transmission corridor. As an example Table 19 of Appendix D shows that of the 91 lattice towers on link 129 only seven will not be planted within the tower bases. I believe that

A

As depicted in Figure 1 of Appendix D of the DES, except for the Likens harvester, none of the equipment listed in the written comments regarding the APS/SDG&E Interconnection Project would be precluded from passing through the tower as long as the equipment direction of travel is parallel or perpendicular to the transmission-line direction. Thus, where the transmission-line direction is perpendicular and parallel with respect to forming operations, forming operations under the tower could be accomplished such that crops could be planted within the tower base. Figure 1 indicates a 33-foot clearance between footings. This path is clear on all four sides of the tower.

Estimates of the additional time and cost required to maneuver around transmission towers have been considered in the Agricultural Study. As farmers use increasingly wider pieces of equipment, their down-the-field speed generally remains the same regardless of the width. As such, estimates of additional time to maneuver around towers would tend to remain the same, or even to decrease, because in using wider equipment the equipment operator would encounter the tower fewer times.

Although wider equipment costs more to operate than smaller equipment of the same function, the time required to maneuver the wider equipment around transmission towers is approximately the same for both. Therefore, the costs of additional forming operations around towers would be expected to remain the same or to increase slightly if equipment with dimensions wider than those commonly used in the Imperial Valley has been used or considered.

B-31-s (continued)

this table was based on inadequate information concerning equipment dimensions and cultural practices and if restudied, with the use of corrected figures and information, would reveal that none of the 91 towers would be planted.

II Diagonal Transmission Lines:

Page D-2 item #3 of Appendix D states that "diagonal orientation of transmission lines with respect to field rows may increase the annual loss of cropping area. Diagonal crossings of fields is considered an increased hazard to flying safety by agricultural aircraft operators." My father and I have two fields which will be crossed diagonally by the 500 KV corridor. This includes a pole in each field. I estimate that the diagonal crossing of the 40 acre field will remove 5.35 acres from production because of inadequate insect control and the loss of property rights within the 200 foot right of way. Most likely, another 3.91 acres will be lost in the corner of the field because of the diagonal dissection of the field. This adds up to a potential loss of 9.26 acres, almost 1/4 of the field's farming area. (See Fig. #1.) I believe that the annual cost of cropping will increase very substantially due to the diagonal line.

Page D-3, item #3 of Appendix D says that "Towers are not skewed when transmission lines cross fields diagonally." However, I have a 14 acre field that will receive an "angle tower" well inside the field. Therefore the lines will not only cross part of the field diagonally, but will form angles at the tower. Due to the angled tower and diagonal crossing

B [We believe the estimates of crop and acreage loss in Appendix D of the DES as amplified by Response No. 4 are correct.

C [If the diagonal crossing is approved, the placement of towers should be negotiated with SDG&E. However, no decision has been made granting the diagonal crossing.

B-31-s (continued)

[of the field, it will be very difficult to successfully farm this small field. (See Fig. #1.) In addition to the possible agricultural loss in this field, it is also probable that this field could never be used as a homesite because of the existence of the transmission lines. When I purchased this property I had plans of building a home and farm shop sometime in the future.]

D [See Response No. 2.

The existence of high voltage transmission towers and lines in an agricultural area creates unnecessary hazards to farmers and removes valuable crop land from production. The existence of diagonal lines within a farming area compounds these problems. The economics of farming are difficult enough without adding new obstacles which will place new financial burdens on farmers.

E [I trust the inaccuracies and discrepancies which I have listed here today be taken into consideration by the California Public Utilities Commission. I believe that other transmission routes can be found which will avoid agricultural areas and prevent the needless destruction of our farm land.

E [Your comments have been noted and will be considered in the final decision.

B-31-s enclosure

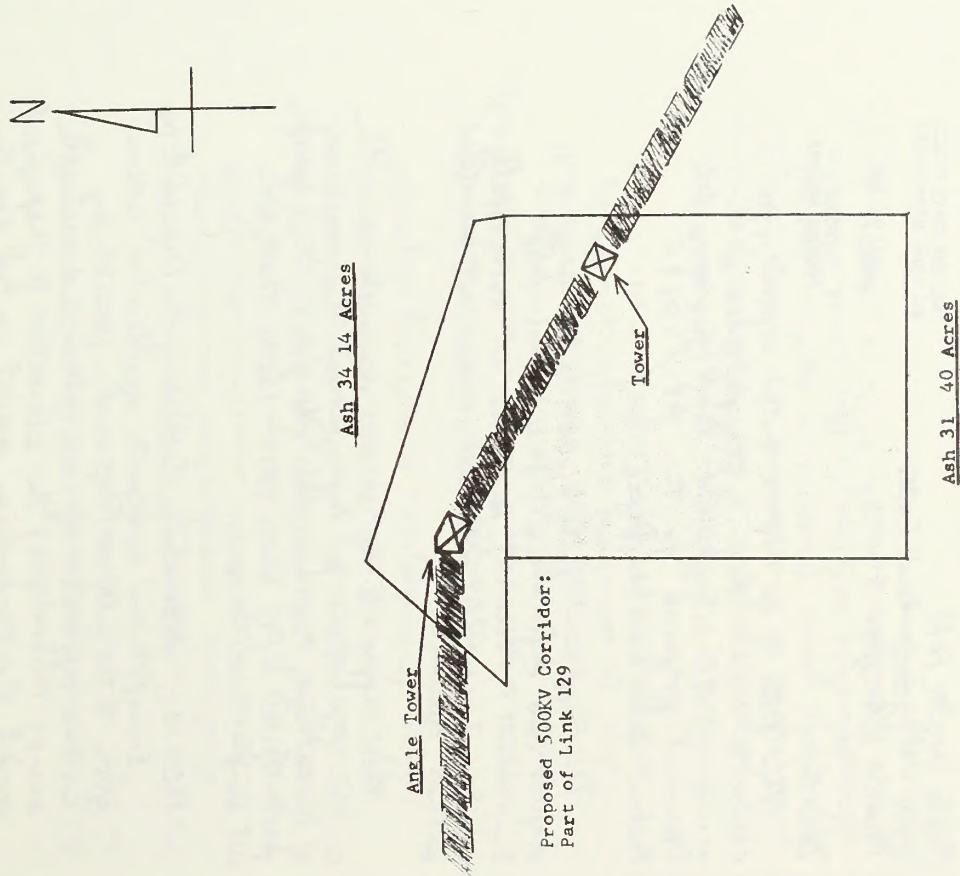


Figure 1

500 KV Diagonal Corridor With Angle Tower

B-32-s

POB 20543
EL CAJON, CA 92021

25 JUNE 1981

ARIZONA STATE OFFICE
BUL. LAND MANAGEMENT

JUL 26 1981

State Director BLM
2400 Valley Center Bank Center
Phoenix, Arizona 85073

7:45 AM
PHOENIX, ARIZONA

Dear Sir:

This letter is in response to the request for comments on the adequacy, completeness and accuracy of the Supplement Draft Environmental Document prepared for the APS/SDG&E Eastern Interconnection Project.

The Supplement fails to correct the many defects and deficiencies of the original Draft Environment Document, and does not successfully raise and consider additional issues not considered within document.

A There appears to be serious noncompliance with certain regulations for implementing the provisions of the National Environmental Policy Act. The specific parts of the CFR Parts 1500-1508 that are not complied with are:

B 1502.14 - Alternatives Including the Proposed Action
Incomplete and inadequate consideration was given to the alternatives made possible by serious application of conservation and renewable energy technologies; the alternative to the proposed project of a transmission project routed directly from PUNES to Bayshore Banning Pass to some northern connection of the SDG&E service area likewise was not given

C Following the Banning Pass route would not meet APS's need to provide additional energy to Yuma; would not improve reliability between APS, IID and SDG&E; and would not provide SDG&E with access to geothermal energy in Imperial Valley and potentially Mexico. In accordance with the CEQ regulations we have eliminated this alternative from detailed study and briefly discussed the reasons it was eliminated, i.e., it did not meet the purpose and need of the Project.

A We believe the results presented in the documents comply with stated regulations. See response attachment to Letter No. B-3 (Table 2-2F).

B We disagree. Refer to SDES, Chapter 3 and Response No. 5.

B-32-s (continued)

-2-

Bretz

the serious consideration it deserves, especially in light of public requests.

D 150216 - Environmental Consequences.

Inadequate consideration has been given to potential, probable environmental effects resulting from fire damage that would be associated with this project over its lifetime; Sections 2, 2.2, and 3, with respect to several applications of conservation and renewable energy technologies, is entirely deficient.

F 150212 - Incomplete or Unavailable Information. This is with respect to the area of biological, health and safety effects, for which a worst case analysis should be included due to admitted scientific uncertainty and gaps in relevant information.

G In addition, the question of conflict between the proposed project and National Security concerns with respect to the vulnerability of long distance high voltage power transmission systems has not been adequately addressed. This would result in a lack of compliance with 150216, ~~Section C~~ Section C.

Sincerely yours,
W. L. Bretz

DR. W. L. BRETZ
POB 22543
CLATON, CA 92021

D [See response to Comment D of Letter No. B-34 and Comment C of Letter No. C-49 (Table 2-2F).]

E [We disagree. Refer to SDES, Chapter 3 and Response No. 5.]

F [Refer to DES, Appendix E, and Response No. 1.]

G [The proposed transmission line is not a direct line, but would interfere with the Southwestern power-grid, thereby strengthening the entire Western-grid system and decreasing vulnerability.]

B-37-s



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

POST OFFICE BOX 1306
ALBUQUERQUE, NEW MEXICO 87103
July 2, 1981

SE

IN REPLY REFER TO:

NATIONAL STATE OFFICE BUL WILDLIFE SERVICE	
SD	149 '81
ASSIST. DIR.	
PLANS. & MFG.	
RECORDS	
TECH. STAFF	
RIGHTS	
PR. & THE PERS.	
CP	
SEE AG	
ADMIN.	
IN. IN	

MEMORANDUM

TO: State Director, Bureau of Land Management, Phoenix, Arizona
Acting Deputy

FROM: Regional Director, Region 2

SUBJECT: Biological Opinion for APS/SDG&E Interconnection Project

On March 12, 1981, a memorandum was sent to State Director, Bureau of Land Management (BLM), Phoenix, Arizona, requesting that formal consultation be initiated for the APS/SDG&E Interconnection Project. The reason for this request was that the Yuma clapper rail population (Rallus longirstris yumanensis) might suffer some level of mortality by accidentally flying into structures located near or across the Colorado River.

On April 8, 1981, the State Director, BLM, responded by requesting formal consultation on the APS/SDG&E Interconnection Project. This proposed project consists of a single-circuit 500 KV transmission line from Palo Verde NGS, 40 miles west of Phoenix, Arizona, to Miguel Substation, approximately 10 miles southeast of San Diego, California, and a double-circuit 230 KV transmission line from Miguel Substation to Mission Top, 24 miles northwest of Miguel Substation. Auxiliary facilities include new substations at Yuma, Arizona, and Imperial Valley, California, as well as a 161 KV transmission line in Imperial Valley and communication facilities throughout the system. Additional details may be obtained from the "APS/SDG&E Interconnection Project, Draft Environmental Document," dated August 1980, prepared by the U.S. Department of Interior, Bureau of Land Management, and Public Utilities Commission, State of California. The final routing and alternatives considered in this consultation are shown on Figures 3-13.

Additional information relating to this project was obtained from "Studies of Waterfowl and Other Birds Along the Lower Colorado River" by Dr. Linwood Smith and Associates, Tucson, Arizona.

The Yuma clapper rail was listed as endangered on March 11, 1967. By that time, this species had expanded its distribution along the Colorado

The comments presented in this letter have been noted and will be considered in the final decision.

B-37-s (continued)

2

River because dams had created suitable marsh habitat. Yuma clapper rail population expansion currently is limited by available habitat.

The rails' habitat on the Colorado River consists of shallow-water marshes containing dense stands of cattail (*Typha latifolia*) and tule (*Scirpus acutus*). Shallow water with mud flats readily available for feeding are preferred by the birds. Cattail and tule stands, dissected by narrow water channels several feet wide, appear to be favored areas, whereas salt cedar (*Tamarix* spp.) stands are rarely utilized except in Mexico. Preferred freshwater breeding habitat is adjacent to dry land and contains low density cattail and tule stands with downed vegetation.

Data indicates most Yuma clapper rails migrate annually, leaving their nesting habitat along the Colorado River in September and October and returning in March and April. Apparently, they are nocturnal migrants following the Colorado River to areas in Mexico where they spend the winter; however, a few remain in the United States.

Rails normally fly from just above ground level up to approximately 200 feet; daytime flights are thought to occur at lower levels than those during the night. Daytime flights have been recorded at elevations of up to 75-100 feet above marsh habitat.

Current estimates indicate that the Yuma clapper rail population is in excess of 1,700 birds distributed from the Colorado River delta in Mexico, northward to Topock Marsh, Arizona.

The proposed APS/SDG&E Interconnection Project will cross the Colorado River just west of Yuma, Arizona. It is probable that the powerlines or associated structures will result in accidental mortality to Yuma clapper rails. The extent of this mortality cannot be quantified, but on the basis of other investigations it is presumed to be low and is not considered significant.

Mortality of birds due to man-made structures is well documented in the literature. On occasion, mortality at certain structures can be quite high. Factors such as weather, time of year, type of structure, and presence of artificial lights play an important role in influencing bird mortality. In the case of overhead lines, visibility of lines, location of lines, and flight characteristics of the bird, appear to play important roles in accidental mortality. Studies which have quantified the mortality of various bird populations indicate that mortality due to powerlines is insignificant, under 1 percent.

Because of the above stated reasons, it is my biological opinion that construction of the APS/SDG&E Interconnection Project is not likely to jeopardize the continued existence of the Yuma clapper rail.

The following recommendations are offered as suggestions to lessen potential impacts to Yuma clapper rails:

B-37-s (continued)

3

1. Structures spanning the Colorado River should avoid impacting riparian habitat such as tule and cattail marshes.
2. Static lines on structures near the Colorado River, if they are part of the construction features, should be eliminated if feasible. Otherwise, they should be marked with large orange balls to make them more visible.
3. If possible, freestanding towers should be used at the Colorado River crossing.

The Fish and Wildlife Service has prepared a rulemaking package to add Bell's vireo (*Vireo bellii pusillus* and *V. b. arizonae*) to the Endangered Species List and designate critical habitat. We expect *V. b. pusillus* to be listed as an endangered species in FY 1982. Thus, we consider the bird a high priority candidate species.

Least Bell's vireo (*pusillus*), one of two subspecies of Bell's vireo in California, has suffered a population decline unparalleled in the history of California ornithology. The species was once widespread and common, breeding throughout the Central Valley, the southern coastal zone, and other areas of California. Declining populations were first noted in the early 1940's, and today less than 100 breeding pairs are restricted to less than 35 isolated localities in southern California (California Department of Fish and Game files).

The decline of the vireo and other lowland riparian birds (willow flycatcher, yellow warbler, yellow-breasted chat) has been attributed to widespread destruction of riparian habitat from dredging, spoil disposal, channel realignments, and brood parasitism by the brown-headed cowbird (*Molothrus ater*) (Grinnell and Miller 1944, Gaines 1974). Destruction of riparian woodlands may have rendered the Least Bell's vireo incapable of withstanding the spectacular increase in brown-headed cowbirds which began in the 1930's (Grinnell and Miller 1944, Gaines 1974).

Currently, riparian zones dominated by willows along the coastal slope of southern California support virtually the entire breeding population of the Least Bell's vireo in the United States (the subspecies also occurs in Baja, California). The Jamul Creek subpopulation, with nine breeding pairs in 1978, is one of the largest known populations in California. Goldwasser (1978) found this vireo breeding in willows along Jamul Creek, east of Lower Otay Reservoir but west of the confluence of Jamul and Dulzura Creeks.

Because of the proximity of this subpopulation to the project site (a distance of about 2 miles), a field examination of the area was conducted by the U.S. Fish and Wildlife Service (Sacramento Endangered Species Office) on May 21, 1981, to determine whether Least Bell's vireo was present. No vireos were heard or seen during 4 hours (6:00 a.m. -

B-37-s (continued)

10:00 a.m.) of field observations in the project area. The same day a field meeting was scheduled with the Bureau of Land Management and the San Diego Gas and Electric Company (SDG&E) representatives to inspect the project site relative to potential conflicts with proposed locations of powerline towers and maintenance roads. Maps and aerial photographs furnished by SDG&E were studied onsite to determine whether disturbances would conflict with the vireo or its habitat.

Inspection and subsequent discussion revealed that there would be no direct impact to the vireo or its habitat. The proposed access road would cross Dulzura Creek in an area already unsuitable as least Bell's vireo habitat. The closest powerline tower would be situated on the toe slope of an adjacent hillside, well away (at least 700-800 feet) from the riparian zone.

A few points should be emphasized. The 500 KV powerline, as proposed, will cross over suitable, but unoccupied, least Bell's vireo habitat on Dulzura Creek. The riparian woodland within the proposed right-of-way is a particularly dense thicket of willows and tangled undergrowth which averages 100 feet in width and is about 1 mile long. This type of woodland is prime least Bell's vireo habitat. The situation along Dulzura Creek is typical of other areas in southern California--there is simply not enough extant vireos to occupy existing available habitat. A key element to the future recovery of the least Bell's vireo is the preservation of these prime habitats for potential reoccupation.

Because the vireo is not presently in the project area, the real issue becomes whether this project will render currently suitable habitat unsuitable. Two aspects of the project could adversely impact the vireo habitat in question: 1) direct mechanical damage from construction and/or maintenance activities; and 2) the indirect influence of electromagnetic fields produced by an operational powerline. Biological effects related to the latter are poorly known and results from scientific studies have been contradictory. Considering that negative effects of electromagnetic fields on physiological or behavioral functions are a real possibility, the only conclusion that can be drawn at this time is that they are an unavoidable, adverse impact. Only the mechanical damage to physical characteristics of the riparian habitat can be controlled in relation to this project.

Thus, in furtherance of the spirit of the Endangered Species Act [Sections 2(c) and 7 (a)(1)] which mandates Federal agencies to utilize their authorities to carry out programs for conservation of listed species (in this case, a species which in reality is endangered but as yet is not officially protected by the listing process), I recommend that project related disturbances be confined to existing roads and creek crossings so that no new disturbance occurs to the riparian zone along Dulzura Creek.

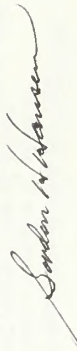
Further consultation is not required unless: (1) new information reveals impacts not considered; (2) the project is modified in a manner

B-37-s (continued)

5

not considered in this opinion; or (3) a new species is listed or critical habitat determined which may be affected by this project.

If any questions arise, please contact the Office of Endangered Species at (505) 766-3972 or FTS 474-3972.



Attachment

cc: Area Office, Phoenix, AZ
Ecological Services Field Office, Phoenix, AZ
Area Office, Sacramento, CA
Director, FWS, Washington, DC (OES)
Director, Arizona Game and Fish Department, Phoenix, AZ

B-37-s (continued)

Literature Cited

- Gaines, D. 1974. A new look at the nesting riparian avifauna of the Sacramento Valley, California. *Western Birds* 5: 61-80.
- Grinnell, J. and A. H. Miller. 1944. The distribution of the birds of California. *Pacific Coast Avif.* No. 27. 608 pp.
- Goldwasser, S. 1978. Distribution, reproductive success and the impact of nest parasitism by brown-headed cowbirds on least Bell's vireos. Federal Aid Wildlife Restoration Project W-54-R-10. Wildlife Management Branch, Nongame Wildlife Investigation, Job IV-1.5.1, Final Report (July 1978).

C-4-s

A-59575
F B46

Anita Hamlet
11344 Wildcat Canyon
Lakeside, California
92040

350 McAllister Street

San Francisco, California 92040

File No. A-59575

June 1, 1981

ENVIRONMENTAL
IMPACT BRANCH

JUN 8 1981

A-59575

Dear Bill Y. Lee,

The following are my comments of the Supplement to the Draft Environmental Document, (SDES), issued on April 27, 1981 in the matter of Application #59575 before the California Public Utilities Commission, (CPUC).

Since the stated Purpose and Need (chapter 1) for the project forms the basic framework for all following discussion in the SDES, I would like to comment first on this part of the document.

Much of the information in this chapter is presented as factual evidence when in reality, the Applicant has not yet proven there is a purpose and a need. No supporting unquestionable data has been submitted into the record to prove the Applicants assertions of the purpose and the need.

To date, the Applicant has failed to submit detailed written information concerning their current status in regards to the buying, selling, burning, and storage of foreign and domestic oil and gas. In addition, the Applicant has failed to submit detailed written commitments concerning the alleged reduction of the buying, selling, burning, and storage of foreign and domestic oil and gas that would come as a result of the Interconnection Project.

The charts labeled 1-2(R) and 1-3(R), "San Diego Gas & Electric Resource and Peak Demands" and "APS Lower Colorado River Area: Resources, Generation Reserve Requirements and Load Forecasts", respectively, contain information which has been subject to much controversy throughout the hearings, but has been entered in this document by the CPUC and the BLM as though they are factual without any controversy as to their accuracy. Demand Forecasts and Population Forecasts are simply conjecture and should never be accepted as fact.

A

Oil and gas provided approximately 80 percent of SDG&E's total electric-energy requirements in 1980. Total oil- and gas-burn in 1980 was equivalent to approximately 15.7 million barrels of residual fuel oil. From 1984 through 1988 the proposed Project could deliver non-oil/gas-fired energy equivalent to approximately 70 million barrels of fuel oil.

SDG&E's present oil purchase contracts expire in mid-1984, which is coincident with the scheduled in-service date of the proposed Project. The amounts of fuel oil that SDG&E would contract for beyond mid-1984 would be significantly influenced by the energy delivered via the proposed Project.

B

We believe the graphs labeled Figures 1-2(R) and 1-3(R) accurately depict the utilities' resources, reserves and forecasts.

C-4-s (continued)

Page 2

continued comments to the Supplement Draft Environmental Doc.

C [The statement made in chapter 1, page 2, that the availability of oil and natural gas supplies is uncertain, is a statement that has not been substantiated by written documentation or by the testimonies of representatives from the oil and gas associations. By contrast, 60 MINUTES recently gave a report interviewing the Natural Gas Association concerning the availability of natural gas. This report stated that there was an abundance of natural gas and there will be an abundance for many years to come.

D [The claim is made that the Interconnect would enhance system reliability. This claim is doubtful in the light of recent occurrences of grid intertie related blackouts in Utah and connected States. Also, Congress was recently told by the GAO that the U.S. grid system was very vulnerable to sabotage, terrorism, or war (Evening Tribune (UPI), 5/14/81). It seems that system reliability might actually be decreased by this intertie. No back up has been submitted as yet by the Applicant to substantiate their claim.

In summary, for this chapter to be accurate and adequate, the Applicant must first prove there is a purpose and need.

The CPUC has emphatically stated on the record its lack of concern for the pollution that will occur in Arizona due to pursuing this supposedly low cost energy alternative of coal powered electricity by building a powerline intertie with that state. However, the SDES prepared by the CPUC and the BLM states as one important concern, in chapter 1, Purpose and Need for the project, that the needs of the Lower Colorado River Area in APS Service Territory be met and to help APS reduce dependence on oil and gas. If any concerns outside California continue to be included in these environmental documents as justification for the project then you must also include all adverse impacts to the environment and to humans as a result of coal generated power in order for this document to be adequate, accurate, and complete. Otherwise any concerns outside California that are currently included

C [Refer to SDES, page 3-2s.

D [The proposed Project would enhance system reliability by providing strong interconnections to the Applicants' service areas. For SDG&E, the proposed Project would provide a strong interconnection of the south end of its system to complement the existing one of Son Onofre of the north end of its system. Long-distance overhead transmission lines have proved to be highly reliable and outages, when they do occur, typically last for only a few hours. The proposed Project would add redundancy to the Southwestern grid, thereby enhancing regional reliability. See also response to Comment G of Letter No. B-32-s.

E [The source of the power generation for the proposed transmission project is outside the scope of the Project and this environmental document.

C-4-s (continued)

Page 3

continued comments.

[in the Draft and Supplement, should be withdrawn.

F [I found Chapter 3 entitled Alternatives: "No Action, Energy Conservation and Load Management, Alternative Generation Sources, Alternative Transmission Systems and Technologies, and Proposed Action, (pgs.1-21), to be inaccurate since these alternatives were eliminated or accepted based upon the Applicants unproven purpose and need statement.

G [On page 3-20 and 3-21, the SDES addresses only one type of undergrounding. This section of the SDES is incomplete since other types of undergrounding are not included.

H [The SDES as well as the Draft are inadequate in the specification of routes. Individual property owners who may be affected cannot make valuable input into the review process if the exact route is not known. Without specifying the route more clearly it becomes difficult to comment on the adequacy and accuracy of route selection. There are not enough landmarks to identify the proposed transmission lines placement: preferred route, alternative routes. A detailed written proposal has not been submitted by the Applicant as to where on each private owners property a tower, ancillary facility, or line would be placed or cross. A legal description is necessary: parcel #, lot #, section #, map #, township, or block # in map form. This kind of specific data is necessary to identify exactly the preferred route and all alternatives studied and considered. The formal record remains inadequate and incomplete until the Applicant has submitted such data. Since the SDES does not include this crucial data, since the maps and descriptions included in the SDES are vague; the SDES is therefore incomplete and inadequate. In addition, there is no map showing the route of the Palo Verde Devers and where the transmission corridor would track once it left Devers. This information is needed so that a better examination of this alternative can be done.

F [We believe the analysis of alternatives is accurate and acceptable, as is the purpose and need statement, which is based on official forecasts by the California Energy Commission. With the exception of the no-action alternative, the alternatives examined represent reasonable options for meeting the stated need. The no-action alternative is required by NEPA and CEQA.

G [Refer to Response No. 7.

H [We disagree. Refer to Response No. 11.

I [Palo Verde-Devers alternative was evaluated and documented in the DES. The alternative was reevaluated for the SDES and determined not to meet the stated purpose and need. Refer to DES (page 3-26), and SDES, Appendix G (page G-8s).

C-4-s (continued)

Page 4

continued comments.

J In regards to the 230KV segment of the preferred route from Los Coches Substation to Mission Tap, I feel that if the line were constructed, out of three alternatives offered, this would be the best since there is an established right of way owned by the Applicant housing an existing double 138KV line. No further acquisition of land would be necessary, however, this statement is without foundation because the Applicant as yet has not produced evidence of their ownership. (See pgs. G-9, G-10, G-11 SDES)

K With regards to Mitigation, chapter 5 SDES, this subject remains insufficient since mitigation recommendations, commitments, and refusals between the Applicant and affected property owners have not been discussed. Furthermore, mitigation cannot be properly dealt with until legal descriptions of all routes (preferred, alternatives) have been made available by the Applicant.

L During a previous hearing session the question was asked, who will be liable in the event someone was injured or killed as a result from contact with any part of this transmission system. For instance, a crop duster plane colliding with a transmission line, a farm worker severely shocked, a fire started by a downed wire or a fire spread by a downed wire, and someone ill as a result of living near this transmission system. The public is very concerned and desires the subject of liability to be discussed and decided upon. If the Applicant is not willing to accept responsibility for their projects and property, then I feel they should be denied permission to construct the Eastern Interconnection Project. The SDES is incomplete without the inclusion of Liability.

J SDG&E typically acquires rights-of-way across property by negotiating easement rights. In some instances SDG&E will acquire rights-of-way by fee title, i.e., ownership. In either event, right-of-way acquisition is recorded in the County Recorder's Office.

K For BLM lands, we feel that the mitigation plan is real, enforceable and therefore adequate. The precise location of the transmission line on private land would have to be negotiated between the Project Applicants and the individual landowner. However, mitigation required by the CPUC on private lands in California would be included as a stipulation of certification.

L Applicants accept responsibility for their actions. The question of liability is decided on a case-by-case basis in the courts. As such, this issue is outside the scope of the environmental documents.

C-4-s (continued)

Page 5

continued comments.

M I am concerned that the ELM and the CPUC (the preparers) of the environmental documents, have no coherent reasoning behind the inclusion or exclusion of material... the contents of the Draft and Supplement are made up of facts, conjecture, assertions without foundation, poor maps and descriptions, controversial data, outdated information, and is incomplete in substance. For these reasons I feel it necessary to request that the preparers include in the Final EIR/EIS Document, an account of why information is included or excluded, the purpose of an environmental impact report, and the definition of an environmental impact report.

In closing, I feel the only responsible action for our county, state, and country, is the action to formulate a plan that would bring a clean, safe, energy efficient future. In order to accomplish this, an overall view must be taken of the energy situation instead of a shortsighted look at the future where one project supplies the need. Many alternatives to the Eastern Interconnection Project mentioned in the SDES, can be the answer we all have been looking for to solve problems such as these:

1. What to do with the growing quantity of waste products.
2. What to do with the growing quantity of sewerage.
3. High cost fuel bills/High utility bills.
4. Pollution.
5. Our vulnerable National Defense/Civil Defense.
6. Depletion of our natural resources/Destruction of our natural resources.

A combined pursuit of solar, wind, natural gas, oil, biomass, and cogeneration, efficiency, conservation practices would provide a broad based energy source, that would be reliable and meet any future needs that may arise. These alternatives have been underestimated in the SDES as to their potential.

M

[We believe the documents meet the requirements of NEPA, CEQA and related regulations and are adequate, complete and clear in descriptions. Refer to response offshoot of Letter No. B-3 (Table 2-2F). For the purpose and definition of an environmental impact statement, we refer you to the National Environmental Policy Act of 1969, as amended, and related Regulations 40 CFR Parts 1500-1508 and California Environmental Quality Act (as amended April 1980) Title 14 California Administrative Code, Chapter 3, Section 15000 et. seq. and related regulations.

N

[We do not believe the alternative energy sources were underestimated. Refer to SDES, Chapter 3, and Response No. 5.

C-4-s (continued)

Page 6

continued comments.

Therefore, instead of approving this project, I recommend and strongly support that the CPUC revoke their present order for SDG&E to pursue this transmission project and re-direct SDG&E to seriously pursue these alternative sources. At the same time I recommend and strongly support efforts on the part of the CPUC to lobby our Federal, State, and Local governments to formulate such a plan as described briefly and incompletely on page 5. Take an "OVERALL VIEW". Explain the problems that are occurring and will continue to occur as a result of a "ONE PROJECT AT A TIME SHORTSIGHTED VIEW". History records, "THAT IN MANY SITUATIONS, SELF-SUFFICIENCY BREEDS STRENGTH DEPENDENCE BREEDS WEAKNESS".

I have been an active participant in the hearings, Application #59575 since 10/7/80 and have tried to provide input into the decision making process. After hearing and reading the evidence thus far 6/5/81, submitted as a part of this process, I, Mrs. Anita D. Hamlet speaking in behalf of my husband and myself am strongly opposed to this project Application #59575 and request that the BLM and the CPUC deny granting a Certificate of Public Convenience and Necessity and approval of a right of way.

Sincerely,

C-8-s



PLANNING DEPARTMENT
COURTHOUSE
EL CENTRO, CALIFORNIA 92243

RICHARD D. MITCHELL
PLANNING DIRECTOR

ENVIRONMENTAL
IMPACT BRANCH

JUN 14 1981

A-59575

June 10, 1981

Bill Lee
Public Utilities Commission
Utilities Division
350 McAllister Street
San Francisco, CA 94102

Dear Mr. Lee:

Attached hereto are the County of Imperial's comments concerning the supplement of the Draft Environmental Impact Document of the APS/San Diego Gas & Electric Interconnection Project. I propose to provide the same comments at your public hearing in El Centro.

Sincerely yours,

RICHARD D. MITCHELL
Planning Director

RDM/kl

Attachment

N.B. No attachment received. Siting criteria referred to in Comment D have been excerpted from a draft of the Transmission Corridor Element of the General Plan, Imperial County.

C-8-s (continued)

COMMENTS ON THE APS/SDG&E INTERCONNECTION PROJECT:
SUPPLEMENT TO THE DRAFT ENVIRONMENTAL DOCUMENT

In April 1981, the PUC and BLM released the Supplement and Appendices to the Draft Environmental Document on the APS/SDG&E Interconnection Project. The following constitutes the County's official comments on that supplement:

A [1. Imperial County objects to the procedure involved in the issuing of its supplement to the Draft Environmental Document and addendum. As indicated in the table of contents, some chapters are intended to replace chapters in the previously issued DES and others are meant to supplement them. This format complicates the review process and makes it difficult to determine the alternatives that are being considered and their corresponding considerations.]

A [We do not believe the format of the SDES complicates the review of the document.]

B [2. Consideration of the Mesquite Lake substation site (page G-8s) has been inadequately analyzed. The text states that "The major reason that Mesquite Lake Site was not one of the final alternative substation sites evaluated was because of the potential removal of approximately 50 acres of potential agricultural land." The Imperial County General Plan, however, recognizes the Mesquite Lake area as unsatisfactory for agricultural production and has designated it for industrial use. Consequently, the use of this land for a substation site would certainly be consistent with the County's plan since the impact on agriculture would be very low. The rationale for eliminating the substation site, therefore, is incorrect.]

B [The Mesquite Lake Substation site is located on agricultural land, while Substation sites D and E are not. However, the overall environmental impacts on a transmission route using Substation Site D would be less than the overall environmental impacts using Substation Site E or Mesquite Lake Substation site. Therefore the route to the south using Substation Site D was preferred.]

C-8-s (continued)

- C** [3. BLM-PUC evaluated one route crossing the Salton Sea. This route was adjacent to the fish and wildlife refuge at the southern end of the sea and was consequently dropped from consideration. It is again our contention that other low impacting crossings of the Salton Sea are possible, yet none has been considered. We again request that all possible alternatives be considered prior to completing the EIR/EIS or granting the preferred designation to any specific route.]
- D** [4. In August 1980, the Imperial County adopted the Transmission Corridor Element of the General Plan. Part of that plan included a section entitled "Siting Criteria for Agricultural Lands" (see attachment). This criteria was developed by the County in conjunction with input from the Imperial County Farm Bureau. We request that this criteria be included in Table 5-2, "Selectively Committed Mitigation," of the Draft Environmental Document. While a statement on agriculture is contained in Table 5-1, we feel that areas through the agricultural portion of Imperial County should be included in Table 5-3, Locations of Selectively Committed Mitigation" for a modifying tower design and tower placement.]
- E** [5. The EIR/EIS discusses only four-legged tower frames for 500 kv and 230 kv lines (Tables 3-3(r), Figure 3-2(r), and Figure 3-3. We continue to feel that monopoles or bi-poles would significantly reduce the amount of agricultural lands being taken out of production as well as reduce impacts on agricultural operations. We therefore request that the use of monopoles be exhaustively reviewed in order to]

C [The primary advantage of a Salton Sea route would be the avoidance of impacts to agriculture. However, there would be significant impacts to other resources, as well as jurisdictional, engineering and economic constraints. (See SDES, Appendix G.) The Salton Sea route as described in the transmission corridor element of the Imperial Valley General Plan would not be feasible because of conflict with the Salton Sea Wildlife Refuge. The Salton Sea route that was assessed was reviewed by the Planning Director of Imperial County prior to being studied. Any other route crossing the Salton Sea would have similar impacts, and moving the alignment north would not significantly alter the overall impacts. Finally, the possibility of acquiring a right-of-way across the Salton Sea is doubtful in view of the expressed positions and/or policies of the USFWS and the California Fish and Game Department.]

D [The CPUC will consider the "Siting Criteria for Agricultural Land" in their decision. As no one has committed to this mitigation, it cannot be included in Tables 5-2 or 5-3 as requested.]

E [Refer to Response No. 4.]

C-8-s (continued)

determine if there is agricultural and visual impacts. If the impacts are shown to be low, we would request that monopoles be required on any routing through Imperial Valley's agricultural lands.

F 6. A small section on page 3-155 discusses the purchase of power whereby SDG&E from Mexico (CFE). If this purchase is realized, an additional transmission line from Mexicali to the 500 kv line across Imperial County will be required. It is our position that this additional line represents a component of the APS/SDG&E interconnection project and should therefore be analyzed in detail as part of the environmental document. Such an analysis should include consideration of alternate routing and delivery of power through Tijuana (as CFE has indicated is feasible).

F [We recognize the potential relationship between the Mexico purchase and this proposal. Although an agreement was reached between SDG&E and Mexico (CFE) on the power purchase, at this time there has been no agreement on the point of delivery to the United States. Therefore, the Mexico tie is not ripe for consideration in this Project.]

G 7. On July 3, 1979, the Imperial County Board of Supervisors endorsed a 500 kv transmission corridor routing which would avoid all irrigated agricultural lands by going north of the irrigated area. This position was later made a fundamental part of Imperial County's Transmission Corridor Element to the General Plan adopted in August 1980. Consequently, the preferred route as indicated both in the environmental document and its supplement are inconsistent with Imperial County's General Plan and we, therefore, continue to strenuously object.

G [We recognize the inconsistency, but we believe the environmentally preferred route has the least cumulative impacts.]

C-8-s attachment

Siting Criteria for Agricultural Lands

The following criteria proposed for siting power lines across agricultural land will mitigate most of these problems and concerns.

1. Transmission rights-of-ways, including the towers and lines, shall be located adjacent to existing roads, canals and property lines. Towers should be sited at the tail end of the field wherever possible.
2. Diagonal alignments of transmission towers and lines through agricultural fields should be avoided.
3. The use of H-frame transmission towers should be considered in the agricultural area where their placement would minimize the removal of land from production and facilitate the operation of farm equipment.
4. When the need arises for a second transmission line, it shall be placed within the same right-of-way as the first line, parallel to and alongside existing towers, in order to avoid the staggering of tower placement and further impact agricultural activities.
5. Lighting on transmission towers near airports or crop duster strips shall be provided according to FAA regulations; lighting of the remaining towers through the agricultural area is considered desirable to protect aerial crop dusting practices.
6. The operating entity shall provide grounding of stationary structures where necessary in order to minimize the build-up of electrical charge.
7. Questions concerning payments for rights-of-way, liability in the event of damage to transmission structures and weed clearance at the tower footings are subject to negotiation between the utility company and the land owners.

C-18-s



IMPERIAL VALLEY CHAPTER **A-59575**

June 17, 1981

My name is Olivia Waegner. I'm a resident of Imperial County and I'm representing the Imperial Valley Chapter of California Women for Agriculture. Our chapter is comprised of members throughout the Valley. We are a diverse group: we are farmers, landowners, educators, business owners, bookkeepers, doctor's wives, secretaries, realtors, office managers, store clerks, as well as non-salaried homeworkers. Our main concern is the impacts the lines will have on agriculture in Imperial County.

Our environmental committee has reviewed the environmental document and come to the conclusion that there was an inadequate study of typical farm operations in our county, and therefore contend that the document was improperly prepared.

A For example: In the environmental document, Appendix A of Appendix D, a table for typical farm operations for watermelons is not listed. Yet we do grow watermelons in Imperial County. Acreage figures for a 4-year period: from 1977-1980 the annual crop report prepared by the county agriculture commissioner indicates acreage figures from 1,978-4,500.

B In the same appendix, Table XVI, listing typical farming operations for sugarbeets, the width of the tractor and digger is incorrect. It shows the width as 5.5 feet, when in fact the equipment is closer to 20 feet wide.

C In the same appendix, Tables I-XXIV, the typical farming operations for crops grown in the Valley: the space required for crop dusters is not listed. Yet, most of our pesticides are applied by aerial applicators. This is a major oversight ~~for~~ the Agriculture Study, as impacts of the lines to crop dusters are

A Watermelon are indeed grown in the Imperial Valley. However, watermelon are not identified in the October/November 1979 field studies of the Agricultural Study because they are not normally planted in the Project area until the period beginning early December and extending through late January. Due to the extremely small percentage of cropped acreage (1,022 acres devoted to watermelon in 1978 as compared to the total cropped acreage of 566,966 acres for the same period) that watermelon represent in Imperial County, watermelon are not given consideration as a multiple crop.

B The sugar-beet-harvester width should be corrected to read 19.6 feet instead of the 5.5 feet indicated in Appendix D, Table XVI of the DES. The width discrepancy does not, however, preclude planting and harvesting operations within the lower base. Areas-out-of-production calculations were based solely on the premise of only four rows being planted through the lower base. As such, there would still be sufficient clearance for the sugar-beet harvester.

C [Refer to Response No. 4.

C-18-s (continued)

page 2

are great.

D [Another discrepancy we found in the environmental document is inadequate description in the location of the 500kv and 161kv lines.

Most annoying was the difficulty in reading the document.

We had to go back and forth to get answers--which many times were not there.

E [A route avoiding the agricultural area as well as the game preserve was not studied. This should have been done.

F [The 10.14 acres of lost agriculture land is a gross understatement, as farm land around the lines and towers will be effected in many ways.

G [1. It will be difficult to farm around the base of the towers. Large equipment is used in farming and the maneuverability will be hampered. In many instances and when the tower is in a corner of a field the land between the tower and the edges of the field will not be farmed because of the difficulty in moving equipment around it and it will be too costly for the returns for that portion of the field.

H [2. Weeds tend to grow profusely around the base of the towers. In order to protect the crop close to the towers more weed control measurew will have to be taken, thus adding to the cost of farming. In the absence of weed eradication the yield will drop in the area around the towers. The presence of a competing weed population in a field of wheat--*cf*

D [Refer to Response No. 11.

E [Refer to response to Comment C of Letter No. C-8-s.

F [We believe the acreage shown is accurate.

G [The impacts upon farming around and/or through transmission towers have been quantified in the Agricultural Study. For specifics, see pages D-18 and D-19 of Appendix D of the DES. See also response to Comment A of Letter B-31-s and Response No. 4.

H [The cost of additional weed-control operations within and around transmission towers has been addressed and quantified in the Agricultural Study. For specifics, see page D-18 of Appendix D of the DES; also, Response No. 4.

C-18-s (continued)

page 3

which Imperial County has considerable acreage--could reduce not only the yield, but quality of wheat.

3. The presence of lines and towers make it difficult to apply agriculture chemicals. Because of the weather conditions in Imperial County we use proportionately more pesticides per acre than any other county in California. Because of state laws agriculture chemicals injurious to bees must be applied at night when a crop is in bloom. Most of the pesticides are applied by air, and night flying is frequent. This is hazardous already, yet it will be more so with the presence of the 500kv and 161kv lines.
4. The presence of right angles in the power lines create an additional hazard to crop dusting.
5. All hazards to crop dusting create ineffective insect control which directly contributes to loss of production..

These conditions will exist if the 500kv and 161kv lines run through the agricultural areas of the county, and they all contribute to lower productivity, in effect loss of acreage conducive to growing agriculture crops. So, the 10.14 acres lost to agriculture production as stated in the document is misleading.

Another item we would like to comment on is the values set for the following considerations given in the document for ecological resources, social and economic land uses, and historical resources.

Ecological - wildlife feeds off our agriculture -- whether it be the crops ~~of~~ the conditions that agriculture created. For example: the sea gull flies from the Salton Sea to feed

The additional aerial-application costs have been addressed on page D-18 of Appendix D of the DES. The issue of safety in relation to aerial applications around transmission towers and lines has been addressed on page D-19 of the same document. See, also, Response No. 4.

J [Refer to Response No. 4.

C-18-s (continued)

page 4

in the agricultural areas of the county. You'll see them in large groups around labor crews waiting to feed from whatever lunch they leave. The egret follows a head of irrigation water through a field waiting for the bugs to come up from the ground. The doves roost in trees and feed off of the grain we grow.

Agriculture in this county is a very important part ⁱⁿ of the balance of nature.

Social and economic land uses - the use of our land for agriculture is definitely an economic use.

Historical resources - agriculture is the history of this Valley--at least this century's history -- even way back to the 1850's when thoughts of farming in this area were first born.

Yet, agriculture is not given a reference in Table 3-9(R) page 10 of 13 for these resources. It's set apart as though agriculture has no ^{part in the} ~~importance~~ to ecological, social and land use, or historical resources. It's a very integral part of all these resources. The criteria set for weighing resources is in question.

Lastly--because I could go on--Imperial County's status as a unique agricultural county should be given proper consideration. Imperial County is an important staple food and fiber growing area. We are ^{one of} ~~among~~ the top 5 agricultural counties in the Nation, as well as the State. We are the number one wheat producing county in California. There were 160,000-180,000 acres of wheat grown in this county this year. Imperial County ranks around 5th or 6th as a cotton producing ~~state~~ county in California, and California is the second cotton producing state in the nation. Imperial County is the/leading county, yield and acreage wise for sugarbeets.

K [We agree. Refer to Response No. 9.

L [Agriculture was "set apart" because of its significance as a resource in the Project area, and so that potential impacts could be accurately assessed independent of impacts to other land-uses and resources. We, too, recognize the interdependent relationship of all resources (including human resources) in our ecosystem. See the penultimate paragraph of Response No. 9.

C-18-s (continued)

page 5.

90% of this county's economy is generated by the agriculture industry. We have a year-round growing season. All these ~~years~~ should classify Imperial County as unique.

M [We therefore ~~do~~ request that the project as presented by San Diego Gas & Electric not be approved and that a route avoiding agriculture and the game ~~refuge~~ ^{refuge} north thru the Salton Sea be studied.

Thank you.

M [A Salton Sea Alternative was studied. See response to Comment C of Letter No. C-8-s.

C-29-s

BEFORE THE CALIFORNIA PUBLIC UTILITIES COMMISSION
Prepared Testimony of RALPH MERLE MENVIELLE

My name is Ralph Merle Menvielle and I was born March 31, 1950. My business address is 1116 East Jasper Road, Heber, California 92249. In 1973, I received a Bachelor of Science from California State Polytechnic University at Pomona, where I majored in agricultural business management.

I was born and raised in the Imperial Valley, and have engaged in numerous agricultural activities for over 20 years. I have planted, maintained, and harvested approximately 12 different types of crops including alfalfa, barley, broccoli, cantaloupe, carrots, lettuce, squash, Sudan grass, sweet corn, tomatoes, watermelons, and wheat. I have been intimately involved in the hiring and supervising of farmworkers, custom agricultural contractors, and other farm related workers.

I am manager of John F. Menvielle Farms in Heber, California, chief buyer for Ted Miller Dairy and Hay Company of Ontario, California, and a partner with my brothers in farming partnerships in the Imperial Valley. These companies and partnerships are actively engaged in agriculture in the Imperial Valley, farming approximately 850 acres.

I am presently a Director of the Imperial County Farm Bureau, and the only representative from Imperial County to the California Farm Bureau Federation's Natural Resources Committee.

C-29-s (continued)

I personally have handled virtually every piece of agricultural equipment used in the preparation, fertilization, watering, and harvesting of both field and vegetable crops. This equipment includes caterpillars, versatiles, rippers, plows, discs, landplanes, Fresnoes, sprinkler pipes and heads, tractors, trailers, listers, mulchers, planters, cultivators, spikers, sidedressers, swathers, harvesting machines, and miscellaneous motorized vehicles.

The purpose of my testimony is to discuss the many substantial deficiencies in the Draft Environmental Document and its Supplement (hereinafter referred to as the "Draft" and the "Supplement," and in combination as the "environmental documents"). I wish to emphasize the deficiencies contained in Appendix D to the Draft relating to the effects that Link 129, if built, would have on agriculture in the Imperial Valley. The environmental documents do not give adequate consideration to the actual effects the route will have on agriculture. Much greater consideration needs to be given to alternate routes, which pose less threat to agriculture and to human health and safety.

I have reviewed the Draft, its accompanying Supplement, and many other documents relating to the proposed power line transmission corridor through the Imperial Valley. I have attended approximately 17 hearings before the Honorable John J. Doran, in Imperial and San Diego Counties, during the following

C-29-s (continued)

months: October 1980, three days; December 1980, seven days; January 1981, three days; February 1981, three days; March 1981, one day.

I have read Appendix D to the Draft entitled "Agricultural Study." Page 4-38 of the Draft refers to Appendix D as the basic source of conclusions regarding the inventory of agricultural resources along Link 129. Page 4-9s of the Supplement refers to Appendix D as the source of the conclusions contained in the Supplement. Consequently, if, as will be shown, Appendix D fails accurately to assess the impact of Link 129 on the agriculture in the Imperial Valley, the conclusions contained in the Draft and the Supplement will be erroneous and will not provide the California Public Utilities Commission (hereinafter referred to as the "CPUC") with sufficient reliable data to properly assess the merits of Link 129.

Page 4-38 of the Draft indicates that Appendix D was based in considerable measure on a 1978 study entitled "The Effects of Electric Transmission Lines and Towers on Agriculture" conducted by Resources International on agricultural practices in the San Joaquin Valley. The validity of Appendix D in assessing the effects of Link 129 on agriculture in the Imperial Valley depends on the validity and applicability of the Resources International report.

C-29-s (continued)

DEFICIENCIES

- A** [I. Generally. There are two basic areas of deficiency in Appendix D.^{1/} The first is a grossly inaccurate assessment of the nature of farming practices in the Imperial Valley. The second is a gross underestimation of the number of acres of cultivatable land along Link 129 which will be removed from agricultural production. These two deficiencies result from Appendix D's reliance on agricultural practices in other parts of the state, and its failure to recognize the land rights being taken from the farmers by SDG&E. These two deficiencies interrelate, in that Imperial Valley's farming practices dictate the number of acres which will be removed from production. And, the easement rights being taken also determine the number of acres to be removed from production.
- B** [
- C** [
- D** [II. Area of Influence. The environmental documents repeatedly claim that only 10.14 acres of agricultural land will be removed from agricultural production along Link 129. (See Table 3-9(R)10 of 13 of the Supplement.) In actual fact, at least 543 acres will be taken out of production. Link 129 passes through 22.4 acres of prime and unique agricultural land, some of the best there is in the Imperial Valley. All

^{1/} All page references hereafter refer to Appendix D of the Draft unless otherwise noted.

A [We believe the assessment of farming practices in the Imperial Valley is accurate.

B [Our assessment of land potentially removed from production is correct, and was based on cultivated land, not "cultivable" land.

C [This is not true, because land under the conductors can still be farmed. Only land used for tower bases would be partially or in some instances completely removed from production.

D [Refer to Response No. 4.

C-29-s (continued)

land situated within the two hundred foot right-of-way will be removed from agricultural production. This acreage will be lost because of:

- Inadequate insect control;
- Inadequate weed control;
- The inability of machinery to maneuver;
- Shock hazards for workers;
- Inadequate irrigation;
- Salt buildup in the soil;
- The impact of electricity on growing crops; and
- The loss of property rights being taken by SDG&E.

The assertion in paragraph 13 on page D-3 that no significant impact on farming operations will occur at the midspan location between transmission towers is absolutely false.

III. Future Agricultural Trends.

A. Machinery Dimensions. Section 2, of page D-1, summarizes future agricultural trends in the Imperial Valley. Paragraph 1 notes that current design trends are leading to increased length in farm equipment. The effect, as is pointed out, is that to reenter the rows on the other side of towers, more clearance will be required for turning farm equipment at the towers' bases. This statement fails to recognize that the width of harvesting equipment also is substantially increasing, and will continue to do so because of cost savings. Thus, increased width, as well as increased length, will increase the area of uncultivable land around the proposed towers. These dimension increases also increase the time it takes to maneuver around the towers, and add considerably to production costs.

E

E [See response to Comment A of Letter No. B-31-s and DES, Appendix D (page D-12).

C-29-s (continued)

F

Also, because farm equipment must work around and near transmission towers and lines, the danger of electrocution will always be present. The danger of electrocution is increased as conductive materials extend closer to charged lines. Therefore, to assess the hazard to workers, it is essential that the dimensions of farm equipment set forth in the environmental documents be accurate.

F [Refer to Response No. 4.

G

Table 2 shows a summary of alleged typical maximum dimensions of farm equipment. These figures are derived from Appendix A to Appendix D, Tables I through XXV. These typical dimensions presumably are used to determine the effects of the towers on the planting and harvesting of various crops. Any incorrect assumptions about the dimensions of equipment will make inaccurate the estimate for both the number of acres which will be removed from production, and the additional costs and lost crop values attributed to the loss or decrease in cropping area, along Link 129. The following is a summary of typical dimension deficiencies contained in Appendix A:

G [See response to Comment A of Letter No. B-31-s and DES, Appendix D (page D-12).

H

1. Irrigation. Sprinkle irrigation is common with many of the crops grown in the Imperial Valley. Aluminum pipe is used for sprinkle irrigation. Aluminum is highly conductive, and requires careful maneuvering around transmission line areas. The main line pipes are 40 feet 9 inches in length, and 10 inches in diameter, while the lateral pipes are 30 feet 9 inches in length, and 3 inches in diameter.

H [Refer to Response No. 4.

C-29-s (continued)

Tables II (broccoli), III (cabbage), V (carrots), and X (onions), in Appendix A to Appendix D, fail to show that sprinkle irrigation is the typical irrigation method for germinating these crops. Tables IV (cantaloupe), VI (cotton), XVI (sugar beets), XVIII (turnips), XIX (alfalfa), XX (bermuda grass) and XXI (rye grass) fail to reveal that sprinkle irrigation is becoming increasingly common for germinating these crops.

Table VIII (lettuce), while noting that sprinkle irrigation is typical, fails to accurately state the dimensions of sprinkle irrigation equipment. As noted above, main line pipes are over 40 feet long, and laterals are over 30 feet long. Table XVII (processing tomatoes), while indicating that sprinkle irrigation is used, fails to list any typical dimensions for the sprinkle irrigation equipment.

As noted at Appendix D, page D-3, the height of the 500 kilovolt power lines above ground at midspan is only 41 feet. Irrigation pipes are transported in the field on trailers 4 to 8 feet above ground, and are rotated vertically from this height. Direct contact between the lines and irrigation pipe is sure to occur. The environmental documents fail to advise the CPUC of this hazard.

2. Pest Control. Aircraft are essential to pest control for substantially all crops in the Imperial Valley. Typical aircraft dimensions, approximately 27 feet

I Since no additional costs are associated with sprinkler irrigation, it was not shown in the tables. Refer also to Response No. 4.

J We feel that rotating irrigation pipes vertically is an unusual handling practice for pipes. Normally, after a person lifts the pipe off of the trailer, he/she rotates the pipe horizontally, then puts it in place, thus eliminating the potential hazard.

K Equipment listed in the reference tables for these operations pertained to equipment operated through or under the tower, and we do not anticipate aircraft operations through the tower.

C-29-s (continued)

long, by 44 feet wide, by 7.5 feet high, should have been included in Tables II-XIX, and Table XXIII in Appendix A.

Watermelon, a crop of great significance in the Imperial Valley, is not mentioned in any of the tables in Appendix A. Watermelons also require aerial applications of insecticides.

3. Harvest. Harvesting of substantially all crops is being performed by increasingly large machinery. Table II (broccoli) erroneously states that hand labor is used. In fact, Likens harvesters, which are approximately 80 feet in width and 10 feet in height, are common-place in broccoli fields in the Imperial Valley. Table VIII (lettuce) fails to indicate the frequent use of wrapping machines, which are 50 feet wide and 10 feet high. Watermelons, not even listed in any of the tables, are harvested in the Imperial Valley with a machine approximately 86 feet wide.

4. Operations Deficiencies. Tables I through XXIII of Appendix A to Appendix D fail to include ditch maintenance as a typical farming operation. Tables I through X and Tables XV through XVII fail to include spiking as a typical farming operation.

B. Irrigation Trends. Page D-1, paragraph 2 in the Draft, dealing with a summary of future agricultural trends in the study area, states that trends in irrigation will result in no additional impacts other than those already mentioned in the

L [See response to Comment A of Letter No. C-18-s.

M [Refer to Response No. 4.

N [Ditch maintenance was not included as ditches do not usually run through transmission tower bases. Spiking is listed as a typical farming operation in Table 5 for carrots.

O [We are not aware of any current or pending laws requiring conversion to plastic pipe for irrigation under high-voltage lines. Irrigation with aluminum pipe is currently practiced under hundreds of miles of high-voltage transmission lines. Although we are aware of wheel-line and center-pivot irrigation systems, we did not observe significant usage of such systems in the Project area. Inconvenience and/or temporary disruption of operations could occur, depending on the geometric relationship between the automatic sprinkler systems and transmission lines. The probability of a sprinkler head being directly aligned under a transmission line conductor and being broken, spraying to a height of 41 feet, is extremely unlikely. Refer also to Response No. 4.

C-29-s (continued)

report, (presumably at page D-12). There is no mention of the fact that conversion from aluminum to plastic pipe may become necessary due to state or federal worker safety regulations. The cost of such conversion will be significant.

There is no suggestion in the discussion of future trends, or elsewhere in the environmental documents, that there exists any method for preventing sprinkler heads or valves from breaking, which is a common occurrence and will cause water to come in contact with power lines and conductors, electrocuting the workers below.

There is no recognition of the increased use of automatic sprinklers which roll on wheels across the fields. Their use will be curtailed severely by the towers, significantly increasing irrigation costs. The environmental documents fail to properly assess the impact of the proposed power lines on trends in agricultural irrigation.

P C. Miscellaneous Trends. There is an omission in the discussion of future trends regarding the use of laser technology. Presently, lasers are being used as measuring devices in farm fields. In the future, lasers will be used to guide automated farm equipment through the fields. The economic impact on farming due to the presence of obstructions in farm fields which limit the use of laser operated planting and harvesting equipment was not considered by the environmental documents.

P [Refer to Response No. 4.

C-29-s (continued)

Another trend not discussed and analyzed is the growing use of radio equipped farm equipment. Page S-12s indicates that corona effects caused by transmission lines will interfere with radio communications. Such effect will be most pronounced in areas of weak reception, and where antennae are located close to a transmission line. There is no discussion in the environmental documents regarding the effects of radio interference on agriculture. Because of the interference created by the power lines, radio communications between workers, supervisors, and home offices will be severely disrupted near power line locations. Such interference will cause costly delays in production.

The foregoing deficiencies in discussing future agricultural trends in the Imperial Valley directly affect the estimates of lost cropping area and lost crop value contained in the environmental documents. Such deficiencies are significant and require further study.

IV. Impacted Crops. Central to determining the impacts the proposed corridor will have on agricultural practices is an accurate determination of the types of crops presently grown along the proposed right of way. Table I lists the type of crops and approximate area which will be affected by the different proposed routes, including Link 129. Table I contains several glaring omissions and understatements. For example, on page D-15, paragraph 10, carrots are listed as the

Q [Although no carrots were observed along Link 129, they were included in the double-cropping evaluation. Refer also to Response Na. 4.

C-29-s (continued)

third ranked vegetable crop in the Imperial Valley in terms of acreage, and the eighth ranking crop in terms of dollar value. Link 129 runs through the heart of the Holtville farming area, commonly referred to as the "carrot capital of the world." However, according to Table I, no carrots are grown along Link 129. In actual fact, approximately 80% of Link 129 is "carrot ground." Another crop not mentioned in Table I, yet commonly grown along Link 129, is watermelon.

In Table 1, the number of miles of broccoli, cabbage, cantaloupe, and onions are grossly understated. These vegetable crops are far more valuable, and bring a far greater return, than do the field crops listed in Table I. These inaccurate assumptions about the types of crops which will be affected render absolutely invalid the estimates of lost crops, lost cropping area, and resultant loss of crop dollars.

V. Crop Damage from Electricity. Another major problem with the analysis of the impact Link 129 will have on agricultural practices in the Imperial Valley is the environmental documents' failure to indicate the number of crops containing leaves with pointed or serrated edges. Appendix E of the Draft at Page E-17, notes that plants with pointed or serrated leaves grown near high voltage power lines experience leaf damage. Page E-17 also notes that such crops suffer electrical damage to their roots. In the Imperial Valley, the

R [We feel the estimates were, if anything, overstated. For example, it was estimated that 17 percent of the route was in lettuce (county average is 10 percent). Since the gross income of lettuce is more than broccoli, cantaloupe etc., it will not increase the dollar impact.

S [Although crops may experience leaf damage, there is no indication that crop yield is affected. Refer to SDES, Appendix E, page E-17.

C-29-s (continued)

following crops have pointed or serrated leaves, and are subject to the leaf and root damage described in Appendix E:

asparagus	bermuda grass	broccoli
cabbage	cantaloupe	cotton
cucumbers	lettuce	onions
squash	Sudan grass	rye grass

The impacted area for these crops will extend the entire length and width of the transmission corridor.

VI. Unplanted Towers. As shown on Table VIII, there are 91 towers along Link 129 as it passes through the agricultural heart of the Imperial Valley. Table XIX summarizes the number of towers which will not be planted within tower bases. For Link 129, it says that seven towers will not be planted. In actual fact, due to the lack of effective weed control, the inability to properly apply insecticides to the area, the lack of ability to use machinery under the towers, the lack of proper fertilization, and the deterioration of the ground quality due to salt build up, none of the 91 towers will be planted within the tower bases.

Insect and weed control require aerial applications. With the existence of the towers, aerial applications under the towers and under the transmission line will be impossible. On March 31, 1981, Pilot Dick Wright testified at pages 2665-2666 of Volume 24 of the Reporter's Transcript, that drifting of aerial applications into the tower bases is both

T [We disagree and believe that only seven towers will not be planted within tower bases.
Refer also to Response No. 4.

C-29-s (continued)

illegal and impractical. The allegation that 84 towers will be planted is a gross overestimate. All 91 towers will be removed from production.

VII. Other Analysis Deficiencies. There are other incorrect assumptions used in the preparation of Appendix D that render its conclusions invalid.

A. Observations in the San Joaquin Valley. Page D-9 notes that many of the observations, and much of the statistical analysis, were carried out in the central San Joaquin Valley. The assumption apparently is that data collected in the San Joaquin Valley accurately represents agricultural practices in the Imperial Valley. This is not a valid assumption. The practices in the Imperial Valley are unique.

The Imperial Valley has different insects to contend with than the San Joaquin Valley. Pink Bollworms, Tobacco Budworms, and Cotton Leaf Perforators are not present in the San Joaquin Valley, yet they are a constant threat to Imperial Valley agriculture.

The number of insecticide applications in the Imperial Valley also significantly differs from that of the San Joaquin Valley. Cotton, for example, requires ten or more aerial applications per year in the Imperial Valley, while requiring five or less in the San Joaquin Valley. In the Imperial Valley, bermuda grass requires five to ten aerial applications per year, while requiring none in the San Joaquin

U [Refer to Response No. 4.

U

C-29-s (continued)

Valley. Onions and sugar beets each require five to ten aerial applications per year in the Imperial Valley, while requiring five or less applications in the San Joaquin Valley. Overall, about twice as many pounds per acre of insecticide are applied by air per year to fields in the Imperial Valley than in the San Joaquin Valley.

In the Imperial Valley, a significant number of aerial applications which are conducted during the day in the San Joaquin Valley, are conducted at night. Night flying is much more prevalent, and constitutes approximately one third of all agricultural related flying in the Imperial Valley. Bees, which are essential to farming operations, are in their hives at night, and therefore are not affected by night applications of insecticides. Regulations issued by the Imperial County Agricultural Commissioner require night flying when fields are in bloom, because bees in the fields during the day will be killed by the aircraft and by the sprayed insecticides. The use of bees in Imperial Valley agriculture is nowhere mentioned in the environmental documents. The significant impact on bees of Link 129 is totally omitted from the study.

As noted in the testimony of the Imperial Valley agricultural pilots heretofore given before the CPUC on March 31, 1981, in Volume 24 of the Reporter's Transcript, night flying near power lines presents significantly more problems than flying during the day. As also noted in their

C-29-s (continued)

testimony, flying in the vicinity of a 500 kilovolt line poses a greater danger than flying near lines of lesser power. Airplanes cannot cut through 500 kilovolt lines, and thus will inevitably crash if there is collision with the lines. The amount of night flying in the Imperial Valley is a practice which varies significantly with that of the San Joaquin Valley.

There are also unique problems of salt buildup in the soils of the Imperial Valley. Link 129 will cause problems with the underground tile used to remove the salt buildup. Ninety-one percent of Imperial Valley farmland utilizes tiling to carry away salt from the soil. Less than one percent of the farmland in the San Joaquin Valley uses such tiling. The equipment used to construct the transmission towers, and the foundations for the towers themselves, will damage the underground tiling system. Again the difference between the Imperial Valley and San Joaquin Valley was not adequately considered by the environmental documents.

The erroneous assumption that practices in the San Joaquin Valley are equivalent to those of the Imperial Valley causes a significant understatement of the true agricultural loss which will be sustained by the existence of Link 129 through the Imperial Valley.

B. Open Fields. Page D-11 discusses cropping patterns along transmission line routings, and establishes

V [We disagree and feel that the agricultural loss is accurately reported in Appendix D.

W [See response to Comment R above.

C-29-s (continued)

several assumptions used in the calculation process. In particular, Appendix D assumes that as to "open fields," 1.84 acres of bedded lands-rows are set up for lettuce, 5.17 acres of open cultivated-checks are set up for alfalfa, and 1.32 acres of open cultivated-dised are set up for fall cantaloupe. However, in the Imperial Valley, bedded lands rows also grow broccoli, cabbage, carrots, onions and sugar beets. Open cultivated checks and open cultivated disced areas are also used to grow these crops. Since alfalfa is assumed to be the predominant crop of these three types of cropping patterns under Link 129, and since alfalfa will be much less affected than the much more valuable vegetable crops, the dollar figures for lost crops in open fields again are seriously understated. One acre of land set up for a vegetable crop will generate approximately \$2,850, while the same acre set up for a field crop will generate only \$650.

The same defective assumption affects Table 20, which presents a summary of estimated total additional farming operations costs due to the presence of the transmission towers through the agricultural center of the Imperial Valley. Table 20 assumes that individual crops will be affected in proportion to the number of towers within fields containing each different type of crop contained in Table 8. In addition to generating more dollars per acre, vegetable crops require significantly greater manpower and materials expenditures than do

C-29-s (continued)

field crops. Since Table 8 grossly underestimates the number of towers in vegetable crop fields, as there is an incorrect assumption that the majority of the open fields will be planted to alfalfa, the additional costs for farming operations under the towers contained in Table 20 necessarily are significantly understated.

In discussing Link 129, Table 16 referring to soil yield reduction factors includes the same faulty assumption regarding bedded lands-rows, open cultivated checks and open cultivated disced areas. Consequently, the soil yield reduction factors of Table 16 are also deficient in significantly underestimating the number of acres of broccoli, cabbage, carrots, onions and sugar beets, which will have reduced yields. Additionally, Table 16 omits carrots and watermelons and, therefore, does not accurately represent the soil yield reduction factors which will be present in the Imperial Valley.

X C. Miscellaneous Deficiencies. Table XXVI, which lists crop acreage, average yields and value data for the Imperial Valley in 1978, suddenly include watermelons which were omitted in Tables I-XXV which discussed typical farming operations. Table XXVI excludes carrots, which were included in the other tables. As noted, carrots are the third ranking vegetable crop in the Imperial Valley.

Y VIII. Easement to be Taken. In addition to the severe underestimation of the number of acres which will be removed

X [See responses to Comments Q and R above.

Y [SDG&E has changed the easement wording to allow farming activities to continue.

C-29-s (continued)

from agricultural production due to the many deficiencies contained in Appendix D, the SDG&E easement being taken itself precludes farming operations on no less than 543 acres of farm land under Link 129. The easement grant states in pertinent part:

"Subject to all above-stated conditions and restrictions, Grantor reserves the right to use the area within the herein granted Easement for agricultural purposes, including but not limited to field preparation, plowing, tilling, cultivating, planting, irrigating, growing and harvesting field and orchard crops and the feeding, pasturing and raising of livestock, provided, however, that Grantor's use for such agricultural purposes shall not, at any time, endanger, interfere with or damage Grantee's facilities."

A. Field Crops and Vegetable Crops. There is a big difference between field crops and vegetable crops. This is noted in Appendix D, Table 4, and on Page P-13 of the Feasibility/Suitability Study. In the Imperial Valley, field crops include alfalfa, cotton, rye grass, Sudan grass and sugar beets. Vegetable crops include asparagus, broccoli, cabbage, carrots, cantaloupe, cucumbers, lettuce, onions, squash, tomatoes and turnips.

As can be seen from the language quoted above, the easement to be taken by SDG&E allows farmers to grow only field crops under Link 129, not vegetable crops. As noted earlier, field crops generate significantly less revenue than

C-29-s (continued)

vegetable crops. Thus, all estimates of crop losses contained in the environmental documents are severely understated, by reason of the authors' failure to recognize the property rights being taken from the farmers.

B. Endangering, Interfering, or Damaging SDG&E's Facilities. The easement being taken also expressly forbids the farmers from engaging in agricultural practices which "endanger, interfere with, or damage Grantee's Facilities." Virtually every farming operation to be conducted under and near Link 129's transmission towers and power lines will "endanger," "interfere with," and likely "damage" the power facilities. Maneuvering large equipment around the towers clearly will "endanger" the structural integrity of the towers, and the wires. Irrigation water and pipes will "endanger" the flow of current through the transmission lines. Field burnings near transmission towers and lines will "endanger" SDG&E's facilities. Collisions are inevitable between the transmission towers and lines and agricultural aircraft engaging in the application of herbicides and insecticides. The May 31, 1981, crash of an Imperial Valley airplane into a 161 kilovolt transmission line tragically illustrates this danger. In addition to the loss of the lives of two men, power to most of Imperial and Coachella Valleys were lost for up to one hour.

Thus, the loss of the right to grow valuable vegetable crops within the easement, and the prohibition of all

Z [See response to Comment Y above. The question of liability is decided on a case-by-case basis in the courts. As such, this issue is outside the scope of the environmental documents.

C-29-s (continued)

activities endangering SDG&E's facilities, will remove from productions at least 200 feet by 22.4 miles, or 543 acres, of farm land.

IX. Summary. It has been repeatedly stated by Clark Siebrand, Manager of Regional Governmental Affairs for SDG&E, and other officials of SDG&E, that the major justification for this project will be the savings of approximately \$100 million per annum to San Diego County customers. This savings results from decreased dependence on oil for power generation. The alternate Salton Sea route, which avoids impacting the Imperial Valley's agricultural land to any significant degree, was rejected by APS and SDG&E because of a mere \$21.5 million cost increase over the cost of Link 129. This cost increase was only 7.16% over the total cost of the project.

P.J. Roemmelt, SDG&E Manager, at pages 7 and 8 of his prepared written testimony, indicates that a major virtue of the project is that its first four years' earnings will more than pay off all present and future capital construction costs in the amount of \$375 million. If \$21.5 million is added to the project's cost, it will only take an additional 76 days for San Diego customers to pay the cost of running the transmission line along the Salton Sea route. When it is considered that the loss of the prime and unique farm land in the Imperial Valley is permanent, and the potential danger to farm workers

C-29-s (continued)

and others working around the power lines presents an unmeasurable cost in human lives and injury, 76 days' income is miniscule. This is particularly true when it is recognized that the power line will save consumers over \$100 million per year, or more than \$5 billion over the life of the project, which is estimated to be approximately 50 years. (See Page 3-225 of the Supplement.)

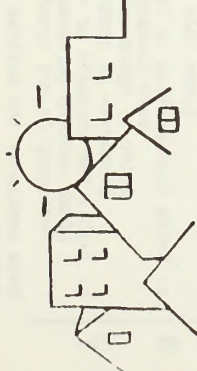
AA

Additional studies should be given to a Salton Sea route. Bird life problems can be mitigated by stretches of undergrounded cable, or a rerouting slightly further north of the proposed Salton Sea route.

AA

[We feel studies of the Salton Sea are adequate. See response to Comment C of Letter No. C-8-s and Response No. 7.

C-32-s



A-59575
BVL
F

Community Energy Action Network
459-4650 or 236-1684

June 10, 1981

ENVIRONMENTAL
IMPACT BRANCH

JUN 18 1981
A-59575

Bill X. Lee,
California Public Utilities Commission
Environmental Impact Branch, 3230
350 Mc Allister Street, Room 3230
San Francisco, CA 94102

RE: APPLICATION # 59575

Dr. Mr. Lee

Pursuant to ALJ Dorans letter of April 27, 1981 and K.J. Kindblad letter of April 27, 1981 we are hereby submitting comments on the Supplemental Draft Environmental Statement for the APS/SG&E Eastern Interconnection Project. We will also have further comments on the document in our statement at the Public Hearings June 18, 1981.

It appears that many previous comments and suggestions on the DES have not been incorporated here. Though it has been stated that they will be included in the final Environmental Statement, we may repeat some of them here, at the Public Hearing, or through cross-examination.

A [The 'Summary' chapter again relies on several assumptions of questionable validity and is replete with phrases such as "provide access to," "help meet", and "could deliver" which are devoid of quantification and hence any value in accessing the real Need for this project.

B [On page S-2s "continued and expanded conservation" is listed as a disadvantage of NO ACTION (a certain bias is showing....). Other disadvantages list "possible...rolling blackouts and brownouts...". This again deals in possibilities with out any realistic reference to probabilities.

C [Alternative Gen. Sources: "In the case of APS...." this statement conflicts with last sentence of first paragraph on Purpose and Need, page S-1s.

D [p. S-4s: The question is not answered: How is SCE going to bring geothermal energy from Mexico and Imperial Valley?

E [p. S-12s: first sentence of last paragraph conflicts with Charles Beck testimony.

F [p. S-13s: Growth Inducement. Finnstrom (CPUC) testimony explanation of peak demand curve jump after 1985 indicates that this project will induce growth in electrical consumption.

G [p. 1-2s: Purpose and Reduce Dependency have same problems in supposition as the corresponding summary sections.

(continued)

PO Box 33686, San Diego California 92103

A [We believe the purpose and need of the proposed Project are adequately addressed in the SDES, Chapter I and are consistent with the California Energy Commission's Biennial Report of January 1981.

B ["Continued and expanded conservation" is not listed as a disadvantage of the no-action alternative. The clause beginning "which include increased generation..." is a nonrestrictive clause clarifying and amplifying "mitigation measures," the antecedent for "which." (A restrictive clause begins with "that.") Had the "which" clause modified "disadvantages," it would have been placed directly next to "disadvantages."

C [The statements are not in conflict. The need for additional power in the Yuma area does not mean that APS must add generating capability. There is adequate generating capability in the APS main system until 1990, but inadequate transmission capacity. See also response to Comment C of Letter No. B-9 (Table 2-2F).

D [See response to Comment F of Letter No. C-8-s.

E [We do not believe it is in conflict.

F [Refer to Response No. 3.

G [See response to Comment A above.

C-32-s (continued)

- H** [Fig. 1-2(R) again exhibits an insufficiently explained jump in peak load at 1985. The jump in 1981 of the APS curve in fig 1-3(R) is patently absurd and a growth rate of 5.4% is totally unsubstantiated.
- I** [p. 3-3s: same comments as S-2s ("might"... "might"...)
solar hot water heating units are cost effective in most cases.
Are additional conservation measures referred to in 2nd para.
on Energy Conservation more or less speculative than coal contracts after 1988 or geothermal development in Imperial Valley?
- J** [p. 3-4s: discussion of APS conservation programs fails to mention if these programs are being implemented in Yuma.
- K** [p. 3-6s. Last paragraph last sentence. CEC did quantify savings from additional conservation in Electricity Tomorrow report.
- L** [p. 3-8s: "Repowering"-- how can something that results in a net reduction in oil/gas consumed per kilowatt generated be considered increasing reliance on oil/gas?
- M** [p. 3-9s: "Pumped Storage" again assuming pumping is accomplished by oil/gas--what about wind, solar electric?
- N** [p. 3-12s: "large scale wind farm development not likely to be available in this decade" - SCE and PGE are already pursuing this.
Solar Energy--current predictions are not in agreement."
A range should be provided with references for high and low values.
- O** [p. 3-13s: no mention made of dispersed solar panels vs. centralized.
Other Techs- SCE planning to have fuel cells operational in this decade.
- P** [Table 3-1(R): Screening: Load Management eliminated here is an error.
See the definition on p 3-3s
Repowering eliminated by time constraints depends on plant, project; this is not valid.
Pumped Storage (see comments on page 3-9s)
- Q** [Table 3-2(R): "Additional Conservation" if remarks on page 3-6s concerning doubling of conservation efforts were applied we could have a range value of 0-292 MWs from additional conservation for the year 1988.
- R** [p. 3-15s: Wind- Calculations in last sentence are unclear or incorrect.
(does this assume 1700 MW total mandated for 1988?)
- S** [p. 3-17s Cogeneration in Yuma "...no...has been identified" who has been looking?
Solar -- again considers only centralized applications.
Biomass-- no explanation of smaller scale project possibilities.
- T** [p. 3-18s: The scenario of displacement of SCE Mexican Geothermal for SD&E eastern purchases presented by HC Powell in his supplemental testimony is not considered here.

This concludes the written comments on the SDS by Community Energy Action Network.

Yours truly,

HC Jay Powell

- H** [See response to Comment A of Letter No. B-9 (Table 2-2F).
- I** [Conditional verb tenses are used throughout, where appropriate, because the "Project" is proposed and not assumed.
We agree. Solar hot water heaters were used as only one example.
They are "speculative" because they cannot be quantified.
- J** [Yes, they are.
- K** [You have misread the sentence. Additional conservation cannot meet the stated need, although it would contribute to meeting the need.
- L** [Repowering of existing older power plants is typically intended not only to improve fuel efficiency but also to increase capacity. With future growth in demand the efficiency savings achieved through repowering will be exceeded by the increased energy production, thereby increasing reliance on oil and gas. In the period of mid-1984 through 1988 and beyond, the proposed action is the most effective means of reducing SD&E's dependence on oil and gas, and diversifying its fuel mix.
- M** [In a pumped-storage facility, water in the lower reservoir is pumped back to the upper reservoir during off-peak nighttime periods. Unless initial development of solar technologies includes energy-storage devices, solar-electric availability would substantially coincide with that of a pumped-storage facility. The uncertainty associated with wind availability and the attendant low capacity-factor (approximately 30%) typically given wind generators would require that back-up facilities be provided. This would have a substantial adverse impact on the economics of employing wind systems for a pumped-storage facility. Furthermore, wind- and solar-electric development is not expected to be available on an adequate scale in the 1980s.
- N** [Since a wind resource has not yet been identified in SD&E's service territory, it is uncertain at this time how much wind generation SD&E may rely upon in the next decade. Large-scale wind-farm development is not likely to be available on an adequate scale in this decade.
Current predictions as to when solar photovoltaic cell technology will be economically competitive with coal are not in agreement. Dr. Charles E. Backus, a leading expert on photovoltaics, testified during CPUC hearings on the Interconnection Project that photovoltaic panels could be economically competitive at near-competitive with conventional electric-energy prices by 1986 for residential and selected intermediate applications, and by 1990 for central-station applications.
These projections assumed continued government support of technology development, and no energy-storage capability for residential and commercial applications, that is, back-up was provided by the local electric utility. Without government support of technology development, Dr. Backus estimated about a five-year delay in achieving the 1986 and 1990 goals.

C-32-s (continued)

- O** [We believe that these alternative technologies are a desirable long-term goal, but that there is a more immediate goal of displacing oil for electrical generation, consistent with national energy policy.]
- P** [Load management is included in the "Additional Conservation" alternative on Table 3-1(R). Repowering was eliminated because it would not displace oil and gas. Pumped storage is not suitable for base-load generation.]
- Q** [The CEC's currently adopted demand forecast for SDG&E has been incorporated in the SDES and includes the CEC's estimate of conservation reasonably likely to occur. During the BR III process the CEC staff attempted to quantify the statewide potential for additional energy conservation through vastly expanded conservation efforts. The CEC did not include the staff's estimates of additional conservation in the adopted demand forecast. These additional conservation estimates were not produced by the CEC staff's complex demand-forecast model, nor were they verified to assure consistent assumptions and no double-counting of effects from overlapping measures. We do not believe it appropriate, therefore, to include capacity estimates for additional conservation in Table 3-2(R).]
- [The CEC staff provided its estimate of additional conservation only on a statewide basis and did not assess cost-effectiveness. Extrapolating the CEC staff estimates to the SDG&E service territory reveals that even with the proposed Project additional energy conservation would not offset SDG&E's need for oil displacement since net requirements for oil generation remain significant.]
- R** [The California Legislature established as a goal that 10 percent of the state's electricity be obtained from wind by the year 2000 (AB2976). The CEC goal prior to BR III was 500 MW by 1987. The CEC BR III goals for 1985 and 1992 were incorrectly cited in the SDES as 100 MW and 2500 MW, respectively. The correct statewide goals are 259 MW by 1985 and 1489 MW by 1992 (Electricity Tomorrow, p. 363). It is not appropriate to interpolate linearly the CEC values for intervening years since development may be slower initially and accelerate in later years. We believe the range given in Table 3-9(R) is appropriate for SDG&E, given the present state of technology development and the lack of wind-resource data for the SDG&E service area.]
- S** [APS Marketing Research Study Program performed a study in 1979 to determine the potential for cogeneration in the APS system through 1988. Although 38 MW of potential cogeneration capacity was identified through the study, none was located in the Yuma area. In addition, AirResearch conducted a national study in 1979 to determine potential cogeneration facilities of at least 10 MW, and identified the desalination plant associated with the Colorado River salinity-control program as one such facility. However, a subsequent change in the desalination process has eliminated that potential.]
- [We do not believe that small-scale alternative energy sources could adequately meet the need for additional electric energy required in the Yuma area in the mid-1980s.]
- T** [Delivery to SCE's system of geothermal energy from Mexico and of sources available at PVNGS are unrelated because SDG&E's primary need is for immediate oil/gas displacement which can be met by existing power purchases deliverable to PVNGS.]

C-33-s



DEPARTMENT OF THE NAVY
WESTERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 727
SAN BRUNO, CALIFORNIA 94066

California Public Utilities Commission
350 McAllister Street
San Francisco, California 94102

Attn: Mr. Bill Y. Lee, Project Manager

Dear Mr. Lee:

Reference is made to the Supplemental Draft Environmental Document (SDED) for the proposed APS/SD&E Interconnection Project and the associated public review hearings conducted at San Diego, California on 18 June 1981.

As one of our functions, this Command provides planning support services to Navy and Marine Corps activities in the nine western states and includes assessing the impact of local and state agency planning efforts on Naval facilities and development plans. Accordingly, general testimony was presented by this Command at the referenced public hearings to comment on the technical adequacy of the SDED and reiterate prior Navy comments on the Interconnection Project. The purpose of this letter is to document the Navy's comments.

Naval shore installations in the San Diego area provide essential support to the Fleet in the National Defense. Although the Navy has an aggressive energy conservation program, these important shore installations are energy-intensive and cannot perform their individual and collective mission without an adequate and dependable supply of power. Recent area-wide power shortages have demonstrated the urgent requirement for programs such as this interconnection project, which will guarantee long-term dependable energy to the entire region. However, the Navy cannot support any project which would impact on the ability of the Naval Air Facility, El Centro to perform its mission, and can only support Route 1 (Links 129, 133 and 138) of corridor Set IX(R) in the Imperial Valley.

In general, the environmentally preferred route and ancillary facilities in the vicinity of Naval Air Facility (NAF) El Centro pose no problem to the station or the Navy Lease Drop Zones and ranges located five miles northwest of the station.

However, NAF El Centro is concerned about the potential adverse safety impacts associated with links 136 and 116 of alternate routes 2 and 3 of corridor Set IX(R). These links are incompatible with and hazardous to the mission and operation of the station and have not been adequately addressed in the SDED.

A [Your comment has been noted and will be considered in the final decision. However, links 129, 133 and 138 are included in the environmentally preferred route.

B [Your comment has been noted and will be considered in the final decision. However, the environmentally preferred route does not use either Link 136 or 116.

C-33-s (continued)

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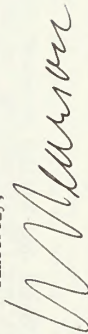
Deployed aircraft operating out of NAF El Centro frequently are required to take off and tow a target attached to a steel cable which could extend as long as two miles behind the aircraft. These aircraft take off to the west and turn to the north to avoid conflict with airway traffic and then proceed to the target ranges. Upon return, they release the towed target and cable alongside the runway. Link 136, located between the NAF El Centro and the Navy lease, would be hazardous to the aircraft as there is a potential of the steel cable striking the 500 KV Transmission line. This is also true if there is a malfunction and the target and cable does not release alongside the runway. The Navy Lease is also used as a parachute drop zone by the U.S. Air Force four nights a week. Link 136 passing as close to Navy Lease as it does, creates additional hazard to personnel and equipment used in the parachute drops.

Similarly, Link 116, located along and within the boundary of the Navy Lease both on the north and the west, poses a serious hazard to personnel and equipment as the Air Force has expanded its operations in the northern part of the drop zone for parachute drops with possible future requirements for further expansion to the north beyond the boundary.

Accordingly, these hazards and negative impact should be properly addressed in the SDEED as environmental consequences and significant unavoidable adverse impacts. In summary, the Navy urges that Links 136 and 116 be eliminated from further consideration due to unacceptable safety impacts to NAF El Centro.

Please notify the Intergovernmental Coordination Office of this Command at (415) 877-7574 of any developments to project links that may affect NAF El Centro.

Sincerely,



M. PEARSON
Director

Installations Planning Division

Copy to:
John J. Doran
Administrative Law Judge
CPUC (State Building)
350 McAllister Street
San Francisco, California 94102

Stan Wagner
Bureau of Land Management
Arizona State Office
2400 Valley Bank Center
Phoenix, Arizona 85073

C-34-s

A-59575 *Page 2*
15/11

June 24, 1981

10914 Serena Lane
Lakeside, CA 92040
714-561-1381

ENVIRONMENTAL
IMPACT BRANCH

JUL 02 1981

A-59575

Public Utilities Commission
State of California
350 McAllister Street, Rm. 94102
San Francisco, California

Dear Mr. Lee,

Having heard Dr. Beck's testimony and having reviewed the APS/SDG&E Interconnection Project Draft Environmental Document, Appendix E, Electrical, Biological, Health, and Safety Effects, we strongly object to the construction of high voltage transmission lines within 1,000 feet of any residence. We object especially to the double-circuit 230 kV line proposed for the Lakeside-Eucalyptus Hills area.

We object to both the EIR (Environmental Impact Report) original draft and the supplement for ignoring the impact in the Lakeside-Eucalyptus Hills area. Greg spoke personally to project manager (for SDG&E), Mike Niggli, who said the reason the EIR supplement does not include Eucalyptus Hills is because there are already 230 kV lines in existence. This does not mean we won't have any impact! More studies were done on the impacts of the 169 and 69 kV lines than the 230 kV's.

The proposed lines will be a fire hazard to our area. The recent Rancho Bernardo fire is witness to this. The fire ignited when high tension wires came into contact with trees. If the same situation happens in Eucalyptus Hills the fire would ignite next to homes. The existing 138 kV lines are already a hazard. Lakeside's drier climate increases the fire hazards. Many areas include brush with dry undergrowth. There are dirt bike trails across the easement. Homeowners operate gas powered machinery. (example: lawnmowers) The fuels of this machinery coming into contact with the electric field could ignite the fuel under the right conditions, causing a hazardous situation.

If a fire ignited under the lines near our home, we may not have a route in which to escape since the transmission line easement crosses both horizontally and perpendicularly across the only access to our home.

1. TV News 8, San Diego
2. Interconnection Project Draft Environmental Document, Appendix E, page 13, sec. 3.2.1.1.2, paragraph 1

A [We feel that impacts resulting from the proposed 230kV were adequately addressed.

B

Easements acquired by SDG&E include the right to trim and/or remove brush and trees within the easement and adjacent thereto when in SDG&E's judgment their growth poses a safety or operational hazard. SDG&E patrols its easements and does trim or remove trees and brush that grow too close to transmission line conductors. See response to Comment 1 of Letter No. C-49 (Table 2-2F) and similar comment presented in Letter No. B-36-s (Table 2-4F).

C-34-s (continued)

-2-

The heavier 230 kV lines will require the construction of an additional tower. Coupled with the fire danger, eucalyptus trees will have to be removed and cut, causing environmental impact.

C [We are already suffering impact from the proposal of the HVTL's. (High voltage transmission lines) Their proposal has caused devaluation and undesirability of our area, legal problems, and mental stress.

[Prospective home buyers, find out a home is near the proposed transmission lines, and won't consider it.

[The legal problems we are facing is our liability if we don't provide a prospective buyer with a disclosure statement, saying there is a possibility of the construction of the proposed transmission lines. One witness at the PUC hearing on June 18, 1981, testified that the San Diego Board of Realtors had gone so far as to require that the disclosure include that there are possible health hazards.

D [The right-of-way has existed since 1958-59. We have been in our home for two years. Where was our disclosure statement letting us know the easement could be used for HVTL's? We would not have purchased our home if we had had the disclosure required of us. Why must we be liable for SDG&E's transmission lines?

E [Mr. Niggli also led Greg to believe there would be no additional transmission lines proposed for the easement. But then we heard that Eucalyptus Hills Landowners Assn. president David Lepire met with Mr. Niggli a week later and it was indicated at that time that more lines are proposed for the future. Mr. Lepire states in his open letter to the PUC: "... we find that this project is only the beginning of a planned expansion to the maximum capacity of 920,000 volts through Eucalyptus Hills..."² What is going on here? What is the truth? (We intended to ask Mr. Niggli about this again at the Eucalyptus Hills Landowners Assn. meeting on June 30th, but he has backed out of attending.)

F [The supplement claims the extra cost of rerouting to the north will cost approx. \$1.3 million more. Mr. Niggli said the reason for not going underground in our area is because the PUC says the number of affected people do not justify the extra cost. We would like to know how the PUC determines our dollar value.

[We realize that the fear of setting a precedent, if the lines were buried, is taking more priority than the impact on human life.

1. Mike Niggli
2. Editorial, Daily Californian, June 19, 1981

C [Refer to Response No. 2.

D [The question of liability is decided on a case-by-case basis in the courts. As such, this issue is outside the scope of the environmental documents.

E [No other lines are being planned at this time.

F [The CPUC has made no such statement, nor has the CPUC rendered a decision on the proposed action. Refer to Responses Nos. 7 and 12.

C-34-s (continued)

-3-

G The right of way for the 230 kV line is only 230 feet. The existing 138 kV travels from one side of the easement to the other. Therefore, adjacent residences could be in a stronger area of the electromagnetic field. Two story homes and variable topography could put residences even closer to the fields. Exactly what will the field strengths be at these homes?

H It has been said that SDG&E plans to use the cheaper conductors rather than the ones designed to minimize electric field strength. Is this true? The original EIR Draft, App. E, page 11, sec. 3.2 paragraph 4 states: "In areas inaccessible to large vehicular traffic, the line will be designed for minimum ground clearance, to maximum spans and provide for an economical design." Will all residential areas be considered "accessible" to large vehicular traffic or will some be subject to "economical design."

Many people in our area are just now finding out about the proposed 230 kV line next to their home. We believe it was an injustice that all families were not notified by mail prior to all public hearings.

I Since we also found out about the proposed project at a later date, we are asking some questions relating to Appendix E of the original draft. We would like the following information for the 230 kV:

1. health hazards
2. amount of corona discharge
3. conductor geometry specifications
4. noise impact
5. fire hazards
6. electric and magnetic field calculations
7. let-go threshold potentials, including children.
8. the effects of variable topography and weather on all of the above.

What will the hazards be to the unborn child, when the mother must reside near and travel under the HVTI's daily? We have heard of the possibility of chromosome damage.

Page E-12, sec. 3.2.1.1.1, (concerning electrical shock) states: "The derivation of a threshold for children was based on body weight, and is generally accepted as 5.0 mA...No information was available from our sources on the body weight of the children for which the 5.0 mA threshold was adopted." This does not provide sufficient information to assume safety for our

1. Merle Hirsch, Physics, University of Minnesota
2. Public television news

G The existing 69kV/138kV line through Eucalyptus Hills is located in the south half of the existing right-of-way which varies in width from 150 feet to 221 feet. The existing line does not meander from side to side. The proposed double-circuit 230kV line is to be located in the north half of this right-of-way. The cumulative electrostatic and magnetic field strengths of the edge of the right-of-way due to the existing and planned facilities are expected to be less than 1.5kV/m and 0.11 gauss, respectively. These reference criteria are the maximum ground-level values expected at the design minimum conductor ground clearance of 30 feet and are based on the maximum thermal rating of the line. At a conductor height of 30 feet the unperturbed field strengths of the edge of the right-of-way are expected to be no greater than 2.0 kV/m and 0.24 gauss, respectively.

H No. The conductors for the proposed 230kV line were selected to optimize several design considerations including conductor tensile strength, tower structure and foundation loadings, conductor ampacity and line losses, magnetic and electrostatic field-strengths, as well as cost. Not all areas along the right-of-way are "accessible" to large-vehicle traffic.

I Refer to DES, Appendix E, and Response No. 1. Regarding fire hazards, see response to Comment B above.

C-34-s (continued)

-4-

children--especially since the EIR goes on to say: "Conditions that result in an individual being unable to release a conductor...may cause death."

Dr. Beck said the amount of electricity under a line could exceed the "let-go threshold--the voltage that freezes muscles, allowing lethal quantities of electricity to flow through the body." He told a reporter after the PUC hearing, Dec. 9, 1980, San Diego, that there could be a situation where a healthy child could grab the door handle of a school bus and receive radiation. He said, "The let-go threshold of children and elderly persons is lower than that for healthy adults." He says the danger could be compounded on very dry or rainy days.

We object to the criteria used in the EIR to discredit studies associating HVTL's with health hazards because the same criteria were not used to discredit the studies that would further the cause for the construction of the transmission lines. For example: page E-15, sec 3.2.2.2, paragraph 2 (referring to Pole's studies of humans exposed to electromagnetic radiation) states: "decreased heart rate, increased blood pressure, fatigue, and weakness of the limbs...Sleeplessness" were observed. The EIR states: "No control groups were used. No physiological measurements were taken at the end of the study...therefore effects...were not accepted as conclusive."

If this is criteria for not accepting Pole's study as conclusive, then by that same criteria the same comments should have been attached to the study referred to on page E-14, sec. 3.2.1.2, paragraph 12. It was a study conducted for the Indiana and Michigan Electric Co. by doctors Amstutz and Miller. This study is one that would further the cause for HVTL's. The EIR states: "no appreciable effects of any kind that could be attributed to the 765 kv line were documented." What the EIR does not state is that there were no control groups, no physiological measurements conducted at the end of the study, before, or during! The only tests coming close to physiological tests were electric shock tests. The lightest weight animals used were 123 pounds. This gives us no reference if we want to compare the hazards to children.

Page E-19, sec. 3.4.1.4, (the conclusion) states: "A limited number of studies on the effects of human exposure to electromagnetic fields have suggested that no significant adverse health effects occur."

1. Beck, Charles, Tulane University biomedical engineer, Dec. 9, 1980, PUC hearings, San Diego

C-34-s (continued)

-5-

The conclusion is cleverly worded since many of the most dramatic studies were performed on animals. Moreno experimented with mice, discovering an increased incidence of glaucoma, Greenberg, Keinich, and Bindokas observed abnormal behavior with honeybees. Warnke observed the ultimate death of honeybees. Naval demonstrated similar results to Moreno, using weaker electrical fields. The results included abnormal serum chemistry levels.¹ Beck also experimented with animals observing abnormal behavior.

Significant human studies were performed by Fole (Spain) and Asanov and Rakov (Soviet Union).² Their observations are very similar.

Cases of damage to vegetation has been documented⁴ by exposure to electrical fields.

Tulane University biomedical engineer, Dr. Charles Beck, testified at the Dec. 9, 1980 PUC hearing in San Diego that there is "no question that electric force fields have effects on exposed animals. These would be alterations in behavior, physiology, and growth."

He says, "A wide variety of health effects have been shown actually or potentially to be associated with exposure to living organisms, including man, to the electric fields...such as those proposed by APS and SDG&E."

Deno, Colcutti, and Michaelson testify on behalf of utility companies to help them gain approval for their projects. Our question is this: "Have any of these men done any original research?" Dr. Beck testified that Dr. Michaelson had used some of his (Beck's) research out of context. One of Dr. Michaelson's justifications for the safety of the transmission lines to humans was by saying that "man is a very adaptable animal." (Such "scientific" reasoning doesn't give us much faith in SDG&E and their "expert" witnesses.)

Homes were built over a chemical dump site in Love Canal in the mid-50's. Hooker Chemical had warned that the land should not be used for residential use.³ It was not until the late 70's that the increase in cancer, miscarriage, and birth defects were directly associated with the toxic chemicals the homes were built over.

Nuclear testing was done in Nevada in the 50's. It was assumed that the test sites were far enough away from people to be safe. It was only recently that the increased incidences of cancer and birth defects in St. George, Utah were related to the

- 1, 2, 3, 4. Appendix E., APS/SDG&E EIR
5. ABC Niteline
2. Dec. 9th, 1980 PUC hearing, San Diego

C-34-s (continued)

-6-

fallout from the tests blown in by winds.

Dr. Charles Beck has warned that high voltage transmission lines should not be within 1,000 feet of any home. How long will it take and how many people will have to suffer until everyone is satisfied there is reason to heed this warning?

The "need for energy" should not take precedence over the health and safety of human life. Neither should increased cost. There are safer alternatives for construction of the transmission line project. These include rerouting and underground.

We hope that when you render the decision to approve-disapprove the proposed transmission lines, that you will render it with the same consideration you would want if you lived near the lines.

Sincerely,

Cathy L. Hewitt
Gregory A. Hewitt

Cathy L. Hewitt
Gregory A. Hewitt

J [Refer to Responses Nos. 7 and 12.

K [P.S.
Much of the information contained in Appendix E of the EIR was not original research, but a review of other's reviews. Since reviews can be subject to bias we do not believe this is sufficient.

K [None of the information contained in Appendix E was original research. We believe the document presents a balanced view of electrical effects encompassing the full range of scientific uncertainty.

TABLE 2-6F
SUPPLEMENT DRAFT ENVIRONMENTAL STATEMENT

Comments of Public Hearings

Summaries of Comments and Responses

<u>Speaker No.</u>	<u>Name</u>	<u>Issue/Concern</u>	<u>Response</u>
<u>Yuma, Arizona - 16 June 1981</u>			
1-s	Edno McDonald for Congressman Bob Stump	Supports SDES alternative north of Yuma and Link 28. Human environment of prime importance.	Your comment has been noted and will be considered in the final decision. Refer also to Response No. 10. Refer to Response No. 9.
2-s	Tommy Long representing Yuma APS/SDG&E Project Relocation Committee	Suggests BLM endorse route approved by State Siting Committee including Link 28.	Your comment has been noted and will be considered in the final decision. Refer also to Response No. 10.
3-s	Jones Osborn Arizona State Senate	Endorses Relocation Committee's statement.	Your comment has been noted and will be considered in the final decision.
4-s	Clyde Gould Wellton-Mohawk Irrigation and Drainage District	Endorses Relocation Committee's statement. Prefers Link 28 crossing Muggins Mountains.	Your comments have been noted and will be considered in the final decision. Refer to Response No. 10.
5-s	Tom Choules	Read letter from Senator DeConcini supporting route approved by State Siting Committee. Concerned that "people values" not equally recognized in decision-making process. Transmission line should avoid agriculture. Prefers Link 28. "It seems inconsistent to me to open up an area for mining leases and location, as has been done with the area through which Link 28 runs, which opens up on June the 20th--this Saturday--for mining locations and then to suggest at the same time that that would make an ideal wilderness area."	Refer to Response No. 9. Refer to Response No. 4. Refer to Response No. 10.
6-s	Gary Crist Yuma Mesa Irrigation and Drainage District	Supports route approved by State Siting Committee and endorses Relocation Committee. Prefers Link 28. Agri-Business Council in agreement with routing recommended by Relocation Committee.	Your comments have been noted and will be considered in the final decision. Refer to Response No. 10. Your comment has been noted and will be considered in the final decision.
7-s	Guy Albert Arizona Public Service	Requests BLM incorporate studies of Links 87 and 88 into FES. Encourages BLM to modify BLM preferred route to coincide with routing approved by State Siting Committee. Encourages BLM to consider Link 28.	FES includes discussion of Links 87 and 88. See FES, Chapter 1. Your comment has been noted and will be considered in the final decision. Refer to Response No. 10.
8-s	Herb Guenther Wellton-Mohawk Irrigation and Drainage District	Link 28, 23 and 26 located one mile to the north and Link 86 located as far north as possible would have lesser impacts than corresponding links because of lesser impacts to biomass.	BLM's preferred route includes Link 86. In regard to Link 28, see Response No. 10.
9-s	Bob Schmitt	Preference for Link 28 supported by videotaped presentation. Agriculture - Aerial application (less coverage increased cost, increased time, night-flying hazard, impact to airstrip).	Refer to Response No. 10. Refer to Response No. 4.
10-s	John Nickerson	Opposed to route through Dome Valley. Visual and aesthetic impacts to residents and view of Coronation Peak (Muggins Mountain). Least visual impact along Link 28.	We believe the documents adequately assess the visual and aesthetic impacts in assigning moderate to high impact to this area. Refer to Response No. 10.
11-s	Carol Stanley Yuma County Board of Supervisors	Board unanimously endorses statements by Relocation Committee, Jones Osborn and supports route selected by State Siting Committee.	Your comment has been noted and will be considered in the final decision.
12-s	Gordon Copple	Concurs with statements of Choules and Long. Asks that Link 28 be considered. Agriculture - Impact to prime farmland and airstrip.	Refer to Response No. 10. Refer to Response No. 4.
13-s	James Diller	Requests that proposed line be placed as far north as possible. "Why (is) the Federal government land so sacred?" Agriculture - Impact to prime farmland and operations, aerial applications.	SDES and FES respond to issue based on the study of Links 87 and 88. Refer to Response No. 8. Refer to Response No. 4.
14-s	Tom Howell	Prefers Link 28.	Refer to Response No. 10.
15-s	R. F. Woodhouse	Concurs with Mr. Choules and Mr. Gould recommendations - prefers Link 28. Agriculture - Impact to prime farmland and airstrip.	Refer to Response No. 10. Refer to Response No. 4.
16-s	John Klingenberg	Concurs with comments of Mr. Choules and Mr. Gould.	Your comment has been noted and will be considered in the final decision.

Table 2-6F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
17-s	Walter Buchanan	Agriculture - Aerial application, Impact to prime farmland and farming operations. Prefers Link 28. If you can open area to mining, why not build power line there. Aesthetic impacts. Visual impact. Proposed line would impact proposed harnesite. Prefers Link 28.	Refer to Response No. 4. Refer to Response No. 10. We believe the documents adequately assess the aesthetic impacts in assigning moderate to high impact to this area. We believe the documents adequately assess the visual impacts in assigning a moderate to high impact to this area. Your comment has been noted and will be considered in the final decision. Refer to Response No. 10.
18-s	Jerry Cullison	Property value - Visual Impact. Proposed line would impact proposed harnesite. Prefers Link 28.	Refer to Response No. 2. Refer to Response No. 10.
19-s	Frank McIlhane State Legislature	Supports route approved by State Siting Committee. Link 28 would have less impact on people, wild-life and private property.	Your comment has been noted and will be considered in the final decision. Refer to Responses Nos. 8, 9 and 10.
20-s	Walt Kamman	Agriculture - Aerial applications, Impact to farming operations. Electrical effects - Health, safety and biological, TV/Radia reception interference (two-way radios). Prefers Link 28.	Refer to Response No. 4. Refer to DES, Appendix E, and Responses Nos. 1 and 4. Refer to Response No. 10.
21-s	Jesse Gomez	Prefers Link 28. Agricultural impacts. Transmission line is hazard to people and aircraft.	Refer to Response No. 10. Refer to Response No. 4.
<u>El Centro, California - 17 June 1981</u>			
22-s	J. Penn Carter Imperial Irrigation District	IID formed the Power Consumers Advisory Committee which recommends the southern route. This route supported by District Resolution (Refer to Letter No. B-34-s (Table 2-4F)).	See response to Letter No. B-34-s (Table 2-4F).
23-s	Glen J. Sullivan California Farm Bureau Federation and Imperial County Farm Bureau	Transmission line should avoid all agricultural land in Imperial Valley. Such routes studied for SDES were rejected with inadequate discussion. Document does not address new technology of undergrounding. Document does not expand on agricultural impacts. Loss of agricultural land because of transmission line is understated. Agriculture - Aerial application (hazard, inadequate insect and pest control and no discussion of making line more visible).	We believe that all alternatives were adequately addressed. Refer to response to similar comment presented in Letter No. C-27-s (Table 2-4F) and Response No. 11. Refer to Response No. 7. Refer to Response No. 4. We believe the figure representing affected agricultural land is accurate. Refer to Response No. 4.
24-s	Mike Wallman Imperial County Farm Bureau	Opposed to transmission line through farmland and near urban areas. Loss of agricultural land because of transmission line would be 543 acres not 10.14 acres as stated in the SDES. Agricultural impacts and loss due to: inadequate insect and weed control, inability of machinery to maneuver, inadequate irrigation, salt build-up in soil and property rights being taken. Electrical effects - Safety (shock hazards to workers, aerial applicators), Impact to honey-bees. Impact to underground tile-drainage system and laser land-leveling.	We believe the figure representing affected agricultural land is accurate. Refer to Response No. 4. Refer to DES, Appendix E, and Responses Nos. 1 and 4.
25-s	Loretta Lopez	Inadequate discussion of impacts to Heber and Calexico based on CEQA parts IS09 and IS029(B), IS140(A,B and E), IS142(A) and IS149.	We believe the impacts have been adequately addressed and are in conformance with CEQA requirements.
26-s	Jack McConnell	Agriculture - Impact to farming operations (around poles), Aerial application. Electrical effects - Health and safety (fence under transmission line "hot").	Refer to Response No. 4. Refer to DES, Appendix E, Response No. 1 and response to Comment C of Letter No. C-49 (Table 2-2F).
27-s	Leona Beatty American Association of University Women	Urges further study of single steel-pole towers to mitigate agricultural impacts.	Refer to Response No. 4. CPUC will consider single-pole tower in the final decision.
28-s	Ralph Carbajal	Recommends southern route through Imperial Valley.	Your comment has been noted and will be considered in the final decision.
29-s	Hazel Guidatte Rodgers	Agriculture - Impact to farming operations and prime farmland, Aerial application. Prefers route avoid irrigated land of Imperial Valley. Property value.	Refer to Response No. 4. See also response to similar comment presented in Letter No. C-27-s (Table 2-4F). Refer to Response No. 2.
30-s	David Dotson representing Charles K. Corfman	Agriculture - Impact to prime farmland and farming operations, Aerial application.	Refer to Response No. 4.

Table 2-6F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
30-s (cont)	David Dotson representing Charles K. Corfman	Electrical effects on crops, machinery. Transmission line will not be beneficial to Imperial County.	Refer to DES, Appendix E, Response No. 1 and response to Comment C of Letter No. C-49 (Table 2-2F). The transmission system is proposed to interconnect the electric power networks of APS, SDG&E and IID. IID and SDG&E are negotiating the possibility of providing transmission service or selling an ownership interest between Arizona and the Imperial Valley. See Chapter 3, page 3-7f, of this document.
31-s	Clyde Irwin Niland Chamber of Commerce	Agriculture - Impact to prime farmland. There are approximately ten transmission lines of various sizes in the area of Niland—overrun with transmission lines.	Refer to Response No. 4. Your comment has been noted and will be considered in the final decision.
32-s	John P. Singh	Agriculture - Impact to prime farmland and farming operations, Aerial application. Too many transmission lines removing agricultural land in Imperial Valley. Suggests routing in Salton Sea area to avoid agricultural land.	Refer to Response No. 4. See response to similar comment presented in Letter No. C-27-s (Table 2-4F).
33-s	John S. Strobel, Jr.	Agriculture - Impact to farming operations and prime farmland, Aerial application. Will cause increased liability. Suggests routing through desert on public land.	Refer to Response No. 4. Regarding liability, see response to similar comment presented in Letter No. C-9-s (Table 2-4F). Refer to Response No. 8.
34-s	D. L. Obergfell	Agriculture - Impact to prime farmland and farming operations. Agricultural land should be avoided. Electrical effects - Safety during farming operations (equipment and refueling).	Refer to Response No. 4 and response to similar comment presented in Letter No. C-27-s (Table 2-4F). Refer to DES, Appendix E, Response No. 1 and response to similar comments of Letter No. C-49 (Table 2-2F).
35-s	Stanley Scaroni	Agriculture - Impact to farming operations. Concerned about liability if a transmission line tower is damaged during farming operations. Avoiding agricultural land of Imperial Valley would cost 10% more and the four-year period to pay off project would be increased by 146 days.	Refer to Response No. 4. See response to similar comment presented in Letter No. C-9-s (Table 2-4F). Dollar costs represent only one element of total costs. Environmental costs would be considerably higher by avoiding agricultural land.
36-s	Earl Brinkman	Agriculture - Impact to prime farmland. Suggests study of northern route crossing the middle of the Salton Sea. Property value - Compensation to adjacent landowners.	Refer to Response No. 4. See response to similar comment presented in Letter No. C-27-s (Table 2-4F). Refer to Response No. 2.
37-s	Mr. Bornt	Transmission line needed for eventual geothermal energy distribution and to reduce dependence on oil. Most practical alignment is straight across valley - southern corridor or Keystone Route. Residents should work with SDG&E in planning for types of towers, tower spacing and compensation for damages incurred.	Your comments have been noted and will be considered in the final decision.
38-s	Cliff Hurley	Would like to know if the criteria used in selecting the environmentally preferred route in Imperial Valley are some as that used for Yuma area.	Yes. The criteria are the same.
39-s	John Osterkamp	Property value - Compensation. Suggests cost-of-living rental for full acreage of right-of-way and royalty system based on kilowatts flowing through line.	Refer to Response No. 2. Compensation must be resolved through negotiations or condemnation proceedings.
40-s	Richard J. Wright	Documents lack information about aerial application.	Refer to Response No. 4.
41-s	Larry Rose	Agriculture - Impact to prime farmland and farming operations (will result in property and income loss), Aerial-application hazards. Suggests routing around agricultural land of Imperial Valley.	Refer to Response No. 4. See response to similar comment presented in Letter No. C-27-s (Table 2-4F).
42-s	Olivia Woegner Imperial Valley Chapter of Women for Agriculture	Same comments presented in Letter No. C-18-s (Table 2-SF).	See response to Letter No. C-18-s (Table 2-SF).
43-s	Richard D. Mitchell representing Imperial County Board of Supervisors	Same comments presented in Letter No. C-8-s (Table 2-SF).	See response to Letter No. C-8-s (Table 2-SF).
44-s	Eduardo A. Rivero	Same comments presented in Letter No. C-11, (Table 2-2F), C-7-s (Table 2-4F), and by Speaker No. 34 (Table 2-3F).	Refer to responses to Letters No. C-11 (Table 2-2F), C-7-s (Table 2-4F) and comments of Speaker No. 34 (Table 2-3F).
45-s	Max Leimgruber	Transmission line should be located where it best satisfies the people.	Your comments have been noted and will be considered in the final decision.
46-s	Ed Lo Bucherie	Agriculture - Impact to farming operations, Aerial applications. Property value - Compensation. Recommends east-west route, route to follow edge of fields, tower placement of field corners, no man-made structures underneath	Refer to Response No. 4. Refer to Response No. 2. Your recommendations will be considered in the final decision. See SDES, Table S-1, Generically Committed Mitigation, No. 8.

Table 2-6F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
46-s (cant)	Ed La Bucherie	lines, lighting and reflective devices on towers.	
47-s	Morscio Menvielle	Same comments presented in Letter No. B-30-s (Table 2-5F).	See response to Letter No. B-30-s (Table 2-5F).
48-s	Robert Menvielle	Same comments presented in Letter No. B-31-s (Table 2-5F).	See response to Letter No. B-31-s (Table 2-5F).
49-s	Pat Waters	Agriculture - Aerial applicators (hazard). Suggests routing around Imperial Valley.	Refer to Response No. 4. See response to similar comment presented in Letter No. C-27-s (Table 2-4F).
50-s	Ben Abotti	Opposed to transmission line through agricultural land of Imperial Valley. Agriculture - Impact to prime farmland and farming operations. Property value. Objects to market-value settlement when property can be sold for "a lot more money than just the market value."	See response to similar comment presented in Letter No. C-27-s (Table 2-4F). Refer to Response No. 4. Refer to Response No. 2.
<u>San Diego, California - 18 June 1981</u>			
51-s	Thane Eddington	Right-of-way should be 1,000 to 2,000 feet from any residence. Electrical effects - Health, safety and environment, Audible noise, TV/Radio reception interference.	See response to similar comment regarding distance presented in Letter No. C-32 (Table 2-1F). Refer to DES, Appendix E, and Response No. 1.
52-s	Gregory Marshall	Electrical effects vague - Health, safety and biological, TV/Radio reception interference, audible noise. No traceable technical basis for environmental documents.	Refer to DES, Appendix E, and Response No. 1. The statement is vague and unspecific, and therefore cannot be responded to.
53-s	John Bohannon	Electrical effects - Health and safety. Destroy property value. Opposes transmission line. Prefers transmission line along edge of his property in Campo or along Mexican Border rather than through middle of his property.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Your comments have been noted and will be considered in the final decision.
54-s	Patricio Homlet	Property owners near Los Caches Substation were not notified. Proposed 230kV transmission line would be adjacent to proposed park for handicapped children and would create impacts on health and safety. Transmission line would create impact on fire-fighting aircraft. Recommends underground construction of 230kV line.	Property owners were notified. See response to Comment C of Letter No. B-34 (Table 2-2F). See response to Comment D presented in Letter No. B-34 (Table 2-2F). Refer to Response No. 7.
55-s	Douglas Lomoir representing Commanding Officer, Western Division Naval Facilities Engineering Command and for the Navy Representative of Federal Regional Council Liaison Officer	Same comments presented in Letter No. C-33-s (Table 2-5F).	Refer to Letter No. C-33-s (Table 2-5F).
56-s	Jacques A. Istel Pilot Knob Corporation	Same comments presented in Letter No. B-9-s (Table 2-4F).	See response to Letter No. B-9-s (Table 2-4F).
57-s	Morvin J. Molecho representing Cal-Poly Department of Urban Planning under grant from Pilot Knob Corporation	Transmission line through central portion of proposed community of Felicity would prevent development.	See response to Letter No. B-9-s (Table 2-4F).
58-s	Gerry Finley	Electrical effects - Safety and biological. Property value - Visual impact. Opposed to transmission line through Eucalyptus Hills area. Eucalyptus trees are highly volatile.	Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Refer to SDES, Appendix G (page G-9s), and Response No. 12. Refer to response to similar comment presented in Letter No. B-36-s (Table 2-3F).
59-s	Michael Spoto representing Eucalyptus Hills Voices Against Transmission Lines	Opposed to 230kV portion of Project; environmentally preferred route as justification is insufficient. Electrical effects - Health and safety, Audible noise, TV/Radio reception interference. Property value - Visual impact. Opposed to expanded use of easements. Should emphasize human dimension of environment rather than floral and faunal.	Refer to SDES, Appendix G, and Response No. 12. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 2. Easements associated with the existing right-of-way would not restrict the expanded use for this proposal. Refer to Response No. 9.
60-s	Jay Powell Community Energy Action Network	The documents (DES, SDES) designed to support decision made years ago. Project unnecessary. Growth projections are too high. Conservation and renewable energy needed.	No decision has been made on the proposed Project. We believe the growth projections are reasonable. Refer to Response No. 5.
61-s	Deanne Homlet	SDES fails to include topics of opposition. Fire hazard in Eucalyptus Hills must be addressed.	This document responds to topic of opposition. See response to Comment E of Letter No. B-34 (Table 2-2F).

Table 2-6F (continued)
Summaries of Comments and Responses

Speaker No.	Name	Issue/Concern	Response
61-s (cont)	Deanne Hamlet	Residents of the northern route have not been contacted. Suggests alternative to north of Eucalyptus Hills on state land. Opposed to Project.	Refer to response to similar comment presented in Letter No. B-15 (Table 2-1F). Refer to Responses Nos. 8 and 12. Your comment has been noted and will be considered in the final decision.
62-s	Dennis Webb	Opposed to line through Bee Canyon (Miguel area). Suggests use of Link 146A instead. Electrical effects - TV/Radio reception interference (would be detrimental to communication in case of fire emergency). Opposed to crossing private property in Bee Canyon when government land is available.	Link 146A would cross Coochamo Experimental Forest currently managed by the California Department of Forestry (CDF). The CDF cannot convey a right-of-way across the land since a transmission line would be incompatible with a bequest whereby the CDF obtained title to the property. The bequest stipulates that the area is to be used for forestry experiments and managed as a game reserve with no commercial development. Therefore, Link 146A was eliminated from further consideration. Refer to DES, Appendix E, and Response No. 1. Refer to Response No. 8.
63-s	Robert Thompson	Property value.	Refer to Response No. 2.
64-s	Walter A. Glover Dulzura Community Development Committee	Transmission line should be located on public land using Link 146A. Should emphasize human environment. Line could be installed underground through residential area of Tecote.	Refer to Response No. 8, and response to similar comment presented by Speaker No. 62-s. Refer to Response No. 9. Refer to Response No. 7.
65-s	Frank Murphy	Documents do not adequately address human environment. Electrical effects - Health and safety. Transmission line impacts his house, well and access road. Proposed alternatives on Murphy property submitted to SDG&E have received no action.	We disagree and feel the human environment has been adequately addressed. Refer to Response No. 9. Refer to DES, Appendix E, and Response No. 1. SDG&E has responded to Mr. Murphy.
66-s	John Hammond Sweetwater Community Planning Group	Requests that area around substation be permanently designated as open space, riding and hiking trails, coordinated with San Diego County Trails master plan, should be developed around perimeter of Project's buffer zone. Lighting on substation should be minimized. TV/Radio reception interference should be minimized. Screening mounds and plantings to mitigate visual impact of substation.	County of San Diego will consider these requests during review of SDG&E's application for a special use permit for this facility. Refer to SDES, Table S-1, Generically Committed Mitigation No. 10. Screenings and plantings included as part of proposed action.
67-s	Sandro L. Murphy	Proposed transmission line would impact proposed homesite and well and is 60 feet from cabin. Electrical effects - Health and safety (father wears pacemaker). Road could not be widened to maintain county standards. Proposed alternatives on Murphy property submitted to SDG&E were rejected.	Your comment has been noted and will be considered in the final decision. Refer to DES, Appendix E, and Response No. 1. This is a negotiable item between the landowner and applicant and depends upon terms and conditions of easement. Proposed alternatives were within the corridor studied and final location is negotiable between landowner and applicant.
68-s	Borrie A. Block	Property value - Visual impact. Psychological effects on neighborhood and residents of Eucalyptus Hills community. Electrical effects - Health.	Refer to Response No. 2. Refer to DES, Appendix E, and Response No. 1.
69-s	Herb Krickhohn	Opposed to transmission line through Eucalyptus Hills. Electrical effects - Audible noise (will increase with multiple transmission lines in 150-foot right-of-way), Health and safety, Impact on telephone equipment. Human environmental impacts were inadequate.	Refer to SDES, Appendix G, and Response No. 12. Refer to DES, Appendix E, and Response No. 1. In addition, see response to comment regarding right-of-way presented in Letter No. B-21-s (Table 2-4F). We disagree and believe they have been adequately assessed. Refer to Response No. 9.
70-s	Mr. Kirkpatrick	Wants to know location of line in regard to his property. Electrical effects - Health and safety.	SDG&E has responded to Mr. Kirkpatrick. Refer to DES, Appendix E, and Response No. 1.
71-s	Brett Hamlet	There were no comprehensive field measurements and mathematical modeling for supplement. Direct, long-term, preventable adverse environmental consequences have been minimized and obscured by stating that they are not significant.	We believe that the field studies and documentation conducted and completed in April and May 1981 were adequate in identifying long-term, significant adverse environmental consequences.

INDEX

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Abatti, Ben	2-6F	4		50-s
Adams, Charles L. - University of Nevada, Las Vegas	2-4F	8	C-37-s	
Advisory Council on Historic Preservation, Western Division of Project Review	2-4F 2-5F	1	B-10-s B-10-s	
Agriculture and Horticulture	2-1F 2-4F	4 3	B-45(k) B-33-s(k)	
Albert, Guy - Arizona Public Service	2-6F	1		7-s
Anderson, Rita O.	2-1F 2-1F	2 8	B-28 C-55	
Arizona Agricultural Aviation Association	2-1F	1	B-7	
Arizona Corporation Commission	2-1F	4	B-45(p)	
Arizona Department of Economic Security, Division of Planning and Policy Department	2-1F	4	B-45(e)	
Arizona Department of Health Services	2-1F	4	B-45(d)	
Arizona Department of Public Safety	2-1F	4	B-45(b)	
Arizona Department of Transportation Aeronautics Division	2-1F 2-2F	4	B-45(a) B-45(a)	
Arizona Game and Fish Department	2-1F 2-2F 2-4F 2-4F	3 1 3	B-35 B-35 B-12-s B-33-s(e)	
Arizona Natural Heritage Program	2-1F 2-4F	4 3	B-45(f) B-33-s(g)	
Arizona Power Authority	2-4F	3	B-33-s(j)	
Arizona State Clearinghouse	2-1F 2-4F	4 3	B-45 B-33-s	
Arizona State Land Department	2-1F	4	B-45(l)	
Arizona State Land Department, Division of Natural Resources	2-1F 2-2F	1	B-6 B-6	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Arizona State Mine Inspector	2-1F	4	B-45(o)	
Arizona State Museum	2-1F	4	B-45(c)	
Arizona State University Center for Public Affairs	2-1F	4	B-45(n)	
Arizona State Water Commission	2-1F	4	B-45(g)	
Arthur, Ann W.	2-4F	2	B-16-s	
Arthur, Fields B.	2-4F	2	B-15-s	
Arthur, James V.	2-4F	2	B-17-s	
Autry, Olis B.	2-1F	2	B-25	
Beatty, Leona - American Association of University Women	2-6F	2		27-s
Benson, Mr. and Mrs. Jack	2-4F	6	C-5-s	
Benton, Keith - Yuma County Water User's Association	2-3F	2		17
Bernath, Lou	2-1F	8	C-72	
Blair, Ron - Commander, Naval Air Facility, El Centro	2-3F	4		33
Block, Barry A.	2-6F	5		68-s
Bohannon, John	2-6F	4		53-s
Bornt, Mr.	2-6F	3		37-s
Bowen, Suzanne	2-3F	8		72
Bradshaw, John and Kathleen	2-4F	5	B-38-s	
Breech, Joe and Evelyn	2-1F	3	B-40	
Bretz, William L.	2-1F	6	C-36	
	2-1F	7	C-51	
	2-2F		C-51	
	2-3F	7		66
	2-4F	3	B-32-s	
	2-4F	7	C-26-s	
	2-5F		B-32-s	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Brinkman, Earl	2-6F	3		36-s
Brinkman, Earl - Imperial County Farm Bureau	2-3F	5		42
Brown, Joseph H. and Luz	2-1F	2	B-18	
	2-1F	8	C-59	
	2-1F	8	C-61	
Buccellato, Linda and Family	2-1F	3	B-41	
	2-1F	8	C-56	
Buchanan, Walter	2-6F	2		17-s
Bucher, James	2-3F	4		36
Buckner, Doug - Serena Road Committee	2-3F	7		68
Bullpit, J. Norman	2-1F	7	C-40	
Burger, Mazo	2-4F	1	B-6-s	
Burk, Howard A. - Western Realty Company	2-1F	8	C-60	
Califano, D.P.M., Robert J.	2-4F	8	C-36-s	
Califano, Robert - Eucalyptus Hill's Landowners Association	2-3F	7		60
California Department of Fish and Game	2-1F	5	C-4(d)	
	2-2F		C-4(d)	
California Department of Parks and Recreation	2-1F	5	C-4(c)	
California Department of Transportation, Division of Aeronautics	2-1F	5	C-5	
	2-2F		C-5	
California Energy Commission	2-1F	5	C-4(b)	
	2-2F		C-4(b)	
California Off Road Vehicle Association	2-4F	3	B-35-s	
California Regional Water Quality Control Board, Colorado River Basin, Region 7	2-1F	5	C-6	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
California State Office of Planning and Research (Clearinghouse)	2-1F 2-4F	5 7	C-4 C-22-s	
Carbajal, Ralph	2-6F	2		28-s
Carter, J. Penn - Imperial Irrigation District	2-6F	2		22-s
Central Brave Aerial Application	2-1F	5	C-18	
Cheeseman, William and Sandra	2-4F	1	B-7-s	
Childers, Mr. and Mrs. Carroll	2-1F	2	B-23	
Choules, Tom	2-6F	1		5-s
Choules, Tom - Yuma Irrigation District	2-3F	3		19
City of Calexico (see Sanchez, Miguel)	2-4F	6	C-7-s	
City of Calexico, Planning Director	2-1F 2-2F	5	C-11 C-11	
Cline, Lora L.	2-1F	2	B-29	
Cole, Tom	2-3F	1		8
Community Energy Action Network (see Powell, Jay)	2-4F 2-5F	8	C-32-s C-32-s	
Comprehensive Planning Organization (San Diego Region's County of Governments) (see Sachs, Steve)	2-1F	5	C-7	
Concerned for the Quality of Life	2-1F	6	C-34	
Connor, Patty Kelly	2-3F	4		27
Cooper, Michael	2-3F	6		53
Copple, Gordon	2-6F	1		12-s
Countryman, Richard - Arizona Commission of Agriculture and Horticulture	2-3F	1		4
Coup & Smith Architects	2-4F	8	C-27-s	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Crist, Gary - Yuma Mesa Irrigation and Drainage District	2-3F 2-6F	1 1		7 6-s
Cullison, Jerry	2-6F	2		18-s
D.S. Dusters	2-1F	5	C-19	
Dakis, Jr., Stephen J.	2-4F	7	C-24-s	
Dawson, Sam	2-1F 2-2F 2-3F	7 6	C-47 C-47	 55
Department of the Army, Los Angeles District, Corps of Engineers	2-1F 2-4F	1 1	B-2 B-11-s	
Department of Energy, NEPA Affairs Division	2-4F	2	B-20-s	
Department of Transportation, Aeronautics Division	2-4F	3	B-33-s(c)	
Diller, James	2-6F	1		13-s
District IV Council of Governments	2-1F 2-4F	4 3	B-45(s) B-33-s(d)	
Donna, John T.	2-1F	1	B-5	
Dotson, David - representing Charles K. Corfman	2-6F	2		30-s
Dotts, Phil	2-3F	6		47
Dowers, Elizabeth	2-4F	1	B-8-s	
Dunn, Anthony T.	2-4F	9	C-40-s	
Eddington, Constance L.	2-1F 2-1F	1 7	B-12 C-44	
Eddington, Thane L.	2-1F 2-1F 2-3F 2-6F	1 7 7 4	B-12 C-44	 62 51-s

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Embree, Bill - Yuma County Farm Bureau	2-3F	2		18
Ethington, Ronald C. - Rio Verde Helicopters and Yuma Aerial Applicators Association	2-3F	2		16
Eucalyptus Hills Landowners Association (see Califano, Robert/Spata, Michael)	2-1F 2-4F 2-4F	8 2 8	C-62 B-29-s C-28-s	
Farm-Air Service, Inc.	2-1F	8	C-58	
Farm Bureau Women of Imperial County (see Menvielle, Marscia)	2-4F 2-5F	2	B-30-s B-30-s	
Finley, Gerry	2-6F	4		58-s
Finz, Steven	2-3F	6		56
Fisher, Lucia	2-1F 2-2F	8	C-67 C-67	
Frontier Agricultural Service	2-1F	5	C-16	
Glover, Walter A. - Dulzura Community Development Committee	2-6F	5		64-s
Golia, John	2-4F	1	B-1-s	
Golia, Mrs. John	2-4F	1	B-2-s	
Goldwater, Barry - U.S. Senate	2-3F	2		14
Gomez, Jesse	2-6F	2		21-s
Gould, Clyde - Wellton-Mohawk Irrigation Drainage District	2-3F 2-6F	2 1		13 4-s
Gray, Laurel	2-3F	6		58
Guenther, Herb - Wellton-Mohawk Irrigation and Drainage District	2-6F	1		8-s

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Hamlet, Anita	2-4F 2-5F	6	C-4-s C-4-s	
Hamlet, Brett	2-1F 2-6F	2 5	B-30	71-s
Hamlet, Deanne	2-6F	4		61-s
Hamlet, Merle	2-1F 2-1F 2-2F 2-4F	3 7 7 7	B-34 C-48 B-34 C-25-s	
Hamlet, Patricia	2-1F 2-1F 2-2F 2-3F 2-6F	3 7 7 7 4	B-34 C-48 B-34	69 54-s
Hammond, John - Sweetwater Community Planning Group	2-6F	5		66-s
Herzog, Leon	2-3F	8		70
Hess, Fred	2-3F	5		38
Hewitt, Cathy L.	2-1F 2-4F 2-5F	8 8 8	C-64 C-34-s C-34-s	
Hewitt, Gregory A.	2-4F 2-5F	8 8	C-34-s C-34-s	
Howell, Tom	2-6F	1		14-s
Hunsberger, Arnold	2-1F	6	C-35	
Hunsberger, Edith	2-3F	8		75
Hurley, Cliff	2-1F 2-1F 2-1F 2-1F 2-4F 2-4F 2-4F 2-4F 2-6F	7 7 7 8 5 5 7 8 3	C-37 C-52 C-53 C-65 B-39-s B-40-s C-13-s C-31-s	38-s

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Hurley, Mari- Imperial Valley American Association of University Women	2-3F	5		43
Huster, Henry	2-3F	8		73
Imhoff, Jr., Dr. Clyde L.	2-1F	7	C-41	
Imperial County (see Mitchell, Richard)	2-4F	7	C-14-s	
Imperial County Farm Bureau (see Brinkman/Sullivan/Mitchell/Wallman)	2-1F 2-1F	3 5	B-36 C-13	
Imperial County Planning Department	2-4F 2-5F	6	C-8-s C-8-s	
Imperial Irrigation District (see Carter/ Twogood) Board of Directors	2-4F	3	B-34-s	
Indian Affairs Commission	2-1F	4	B-45(m)	
Inis, et al., Patricia L.	2-1F	4	B-48	
International Boundary and Water Commission, U.S. and Mexico	2-1F 2-2F	4	C-2 C-2	
Irwin, Clyde - Niland Chamber of Commerce	2-6F	3		31-s
Istel, Jacques-A. - Pilot Knob Corporation	2-6F	4		56-s
Istel, Jacques-Andre	2-4F	1	B-9-s	
Jenkins, Ruth S.	2-1F 2-1F 2-4F	4 8 1	B-43 C-66 B-3-s	
Kamman, Walt	2-6F	2		20-s
Kennerly, Robert - Yuma County Board of Supervisors	2-3F	3		20
King, Geoffrey R.	2-4F	8	C-35-s	
Kirkpatrick, Mr.	2-6F	5		70-s

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Kirkpatrick, R.C.	2-4F	6	C-10-s	
Kirkpatrick, Robert	2-3F	7		65
Klingenberg, John	2-6F	1		16-s
Konz, C. L.	2-1F	8	C-57	
Kostka, Robert	2-4F	9	C-39-s	
Krickhahn, Herb	2-6F	5		69-s
Krickhahn, Marcia	2-4F	6	C-2-s	
Krutzsch, August	2-3F	7		64
La Bucherie, Ed	2-6F	3		46-s
Lamaire, Douglas - representing Commanding Officer, Western Division Naval Facilities Engineering Command and the Navy Representative of Federal Region Council Liaison Officer	2-6F	4		55-s
Lear, Betty	2-3F	5		41
Leimgruber, Max	2-6F	3		45-s
Lenertz, Jim	2-3F	1		10
Lindenmeyer, Kathleen E.	2-1F 2-1F 2-3F	1 7 7	B-14 C-45	63
Lindenmeyer, Thomas A.	2-1F 2-1F	1 7	B-14 C-45	
Long, Tommy L. - representing Yuma APS/SDG&E Project Relocation Committee	2-3F 2-3F 2-6F	1 1 1		3 6 2-s
Lopez, Loretta	2-6F	2		25-s
Joe Maggio, Inc.	2-1F 2-2F	8	C-71 C-71	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Magoffin, Richard	2-3F	6		57
Malecha, Marvin J. - representing Cal-Poly Department of Urban Planning under grant from Pilot Knob Corporation	2-6F	4		57-s
Mar Aviation	2-1F	5	C-15	
Maricopa Association of Government Transportation and Planning Office	2-4F	3	B-33-s(b)	
Maricopa Association of Governments	2-1F 2-4F	4 3	B-45(r) B-33-s(a)	
Maricopa Audubon Society	2-1F	3	B-39	
Maricopa County Department of Planning and Development	2-1F	1	B-10	
Marshall, Gregory M.	2-1F 2-3F 2-6F	2 7 4	B-22	61 52-s
Maupin, Robert O.	2-1F 2-1F 2-2F	4 8	B-46 C-68 B-46	
Menvielle, John	2-3F	6		48
Menvielle, Marscia	2-6F	4		47-s
Menvielle, Marscia - Farm Bureau Women of Imperial County	2-3F	5		46
Menvielle, Marscia - on behalf of Farm Bureau Women of Imperial County	2-4F	7	C-17-s	
Menvielle, Ralph	2-4F 2-5F	8	C-29-s C-29-s	
Menvielle, Robert	2-4F 2-4F 2-5F 2-6F	3 7 4	B-31-s C-15-s B-31-s	48-s
Metropolitan Water District of Southern California	2-1F	5	C-10	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Mineral Resources Department	2-1F	4	B-45(j)	
	2-4F	3	B-33-s(h)	
Mitchel, Robert - Imperial County	2-3F	4		35
Mitchell, Richard D. - representing Imperial County Board of Supervisors	2-6F	3		43-s
Moore, Howard	2-3F	4		28
Moore, Robert - Agri-Business Council	2-3F	3		23
Morel, Harry	2-3F	8		77
Murphy, Frank	2-1F	8	C-54	
	2-6F	5		65-s
Murphy, Frank H.	2-1F	8	C-70	
Murphy, Sandra L.	2-6F	5		67-s
McConnell, Jack	2-6F	2		26-s
McCutchan, Betty-jean and Bruce A.	2-1F	7	C-38	
McDonald, Edna - for Congressman Bob Stump	2-3F	1		5
	2-6F	1		1-s
McDonald, Herbert	2-3F	4		29
McGrath, Francis J.	2-1F	5	C-25	
McIlhaney, Frank - State Legislature	2-6F	2		19-s
Needham, David L. and Anita	2-1F	1	B-4	
	2-4F	2	B-18-s	
Newman, Jim D.	2-1F	5	C-23	
Nickerson, John	2-6F	1		10-s
Nickson, Helen	2-3F	4		25
Northern Arizona Audubon Society	2-1F	3	B-31	
Norton, Bob - for Councilman Bombard, City of Yuma	2-3F	3		21

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Obergfell, D. L.	2-6F	3		34-s
Obergfell, D. L. C.	2-4F	6	C-11-s	
Office of Economic Planning and Development	2-1F	4	B-45(q)	
	2-4F	3	B-33-s(f)	
Oney, Darlene - Yuma Proving Ground	2-3F	4		31
Osborn, Jones - Arizona State Senate	2-3F	1		1
	2-3F	2		15
	2-6F	1		3-s
Osterkamp, John	2-6F	3		39-s
Osterkamp, Mark N.	2-4F	7	C-16-s	
Paine Aero Service	2-1F	5	C-20	
Parker, Dale E. and Martha B.	2-1F	2	B-24	
Paxton, Barbara	2-1F	6	C-32	
Paxton, Glenn	2-1F	6	C-32	
	2-4F	6	C-1-s	
Peterson, Edythe	2-1F	6	C-28	
Peterson, Jack F.	2-1F	6	C-28	
	2-3F	8		74
Peterson, Jr., Mrs. James F.	2-1F	2	B-16	
Phillips, Shirley	2-4F	1	B-13-s	
Powell, Jay - Community Energy Action Network	2-3F	7		67
	2-6F	4		60-s
Priddy, E.O.	2-1F	7	C-43	
	2-2F		C-43	
Radiation Regulatory Agency	2-1F	4	B-45(i)	
Ramsey, Jack	2-3F	2		11

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Reed, A. L.	2-1F 2-4F	6 6	C-27 C-12-s	
Reel, Rebecca J.	2-1F 2-3F	2 8	B-26	71
Reel, Timothy	2-1F 2-2F	2	B-27 B-27	
Residents of Calexico (Petition)	2-4F	8	C-30-s	
Riebe, Norman J.	2-3F	3		22
Rivera, Eduardo A.	2-6F	3		44-s
Roddick, David - Unit B Irrigation and Drainage District	2-3F	2		12
Rodgers, Hazel Guidotte	2-6F	2		29-s
Rogers, Jim - Yuma Chamber of Commerce	2-3F	3		24
Rood, Michael	2-3F	4		37
Rood, Roy	2-3F	5		45
Rose, Larry	2-1F 2-6F	5 3	C-22	41-s
Sachs, Steven - Comprehensive Planning Organization	2-3F	6		49
Sadler, Jack	2-1F	5	C-24	
Sanchez, Miguel - City of Calexico	2-3F	4		34
San Diego Archaeological Society, Inc.	2-1F 2-2F	8	C-69 C-69	
San Diego County, Department of Planning and Land Use	2-1F 2-1F 2-2F	5 5	C-8 C-9 C-8	
San Diego Gas & Electric Company	2-1F 2-2F	5	C-12 C-12	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
San Diego Voice of Energy	2-1F	5	C-14	
	2-4F	6	C-6-s	
Serena Road Committee (see Buckner, Doug)	2-1F	4	B-44	
	2-1F	8	C-63	
	2-2F		B-44	
Scarbrough, John	2-3F	1		9
Scaroni, Stanley	2-3F	5		39
	2-6F	3		35-s
Scheckler, Donald E.	2-1F	6	C-29	
Schmitt, Bob	2-6F	1		9-s
Schmitt, Esther R.	2-1F	6	C-33	
	2-1F	7	C-39	
	2-4F	6	C-3-s	
Schulte, Dale	2-3F	4		30
Shaffer, Roderick and Judith	2-4F	7	C-23-s	
Shipek, Florence	2-1F	2	B-15	
	2-1F	7	C-46	
Singh, John P.	2-6F	3		32-s
Snively, A. W. - Jamuel-Dulzura Planning Group	2-3F	6		50
Southcott, Fern - California Tribal Council	2-3F	7		59
Spata, Michael - United Enterprises	2-3F	6		51
Spata, Michael C. - on behalf of Eucalyptus Hills Landowners Association	2-4F	2	B-27-s	
Spata, Michael C. - representing Eucalyptus Hills Voices Against Transmission Lines	2-6F	4		59-s
Spata, Michael and Longley-Cook Engineering on behalf of Eucalyptus Hills Landowners Association	2-4F	3	B-36-s	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Spencer, Carolyn M.	2-1F	2	B-20	
	2-1F	7	C-42	
	2-4F	2	B-19-s	
	2-4F	7	C-19-s	
	2-5F		B-19-s	
Spencer, Larry	2-4F	2	B-19-s	
	2-4F	7	C-19-s	
	2-5F		B-19-s	
Stanley, Carole - Yuma County Board of Supervisors	2-6F	1		11-s
State Land Department	2-4F	3	B-33-s(i)	
Stewart, Dale - Arizona Agricultural Aviation Association	2-3F	1		2
Stoker Company (Aerial applicators)	2-1F	5	C-17	
Strobel, Jack	2-3F	5		44
	2-4F	6	C-9-s	
Strobel, Jr., John S.	2-6F	3		33-s
Stump, Bob - U.S. Congress, 3rd District, Arizona (see McDonald, Edna)	2-1F	1	B-13	
Sullivan, Glen J. - California Farm Bureau Federation and Imperial County Farm Bureau	2-6F	2		23-s
Tallaferro, E. H.	2-3F	6		52
Tochtrop, Pat	2-3F	6		54
Thompson, Robert	2-6F	5		63-s
Thompson, Barbara L. and Terry A.	2-1F	6	C-30	
	2-4F	2	B-21-s	
	2-4F	7	C-20-s	
Twite, Aaron M.	2-4F	2	B-25-s	
Twogood, Donald - Imperial Irrigation District	2-3F	4		32

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
U.S. Department of Commerce, National Oceanic and Atmospheric Administration	2-4F	2	B-28-s	
U.S. Department of Health and Human Services, Environmental Health Services Division, Center for Environmental Health	2-4F	2	B-22-s	
U.S. Department of Health and Human Services, Public Health Services, Center for Disease Control	2-1F 2-1F 2-2F	2 5	B-19 C-4(a) B-19	
U.S. Department of the Navy	2-4F 2-5F	8	C-33-s C-33-s	
U.S. Department of the Navy, Western Division, Naval Facilities Engineering Command (see Lamaire)	2-1F 2-2F	4	C-3 C-3	
U.S. Department of Transportation, Federal Aviation Administration, Western Region	2-1F	2	B-17	
U.S. Environmental Protection Agency	2-1F 2-2F 2-4F	3 2	B-32 B-32 B-24-s	
U.S. International Boundary and Water Commission	2-4F	7	C-21-s	
USDA, Forest Service	2-1F 2-2F	4	C-1 C-1	
USDA, Forest Service, Cleveland National Forest	2-1F	1	B-1	
USDA, Soil Conservation Service	2-1F 2-1F 2-2F 2-2F 2-4F	1 3 1	B-11 B-38 B-11 B-38 B-14-s	
USDI, Bureau of Mines, Intermountain Field Operation Center	2-1F 2-2F 2-4F	1 1	B-3 B-3 B-5-s	
USDI, Fish and Wildlife Service	2-1F 2-2F 2-4F 2-4F 2-5F	3 2 5	B-33 B-33 B-26-s B-37-s B-37-s	

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
USDI, Fish and Wildlife Service, Ecological Services	2-1F	2	B-21	
USDI, Water and Power Resources Service, Lower Colorado Regional Office	2-1F	3	B-42	
United Enterprises, Inc. (see Spata, Michael)	2-1F 2-2F	7	C-49 C-49	
University of Arizona, College of Agriculture, School of Renewal Natural Resources	2-1F	4	B-45(h)	
Unsigned	2-1F	6	C-31	
Val-Air Company, Inc.	2-1F	5	C-26	
Van Alstyne, Esther	2-4F	1	B-4-s	
Venden, Leonard	2-3F	8		76
Visco Flying Company	2-1F	5	C-21	
Waegner, Olivia - Imperial Valley Chapter of California Women for Agriculture	2-3F 2-4F 2-5F 2-6F	5 7 3	C-18-s C-18-s	40 42-s
Wallman, Mike - Imperial County Farm Bureau	2-6F	2		24-s
Waters, Frank	2-4F	8	C-38-s	
Waters, Pat	2-6F	4		49-s
Wellton-Mohawk Irrigation and Drainage District (see Gould, Clyde/Guenther, Herb)	2-1F 2-2F	4	B-47 B-47	
Webb, Dennis	2-6F	5		62-s
Wyly, Ben - Chairman, Jacumba Volunteer Fire Department	2-1F	7	C-50	
Wilson, Jr., Robert B.	2-1F	4	B-49	
Woodhouse, R. F.	2-6F	1		15-s

Index (continued)

	<u>Table</u>	<u>Page</u>	<u>Letter No.</u>	<u>Speaker No.</u>
Wright, Richard J.	2-6F	3		40-s
Young, Roy R.	2-1F 2-3F	8 4	C-73	26
Yuma APS/SDG&E Project Relocation Committee (see Long, Tommy)	2-1F	3	B-37	
Yuma Audubon Society	2-1F 2-2F	1	B-9 B-9	
Yuma County, Office of the Board of Supervisors (see Kennerly, Robert/ Stanley, Carol)	2-4F	2	B-23-s	
Yuma County Planning and Zoning Department	2-1F	1	B-8	



ERRATA AND CHANGES

CHAPTER 3 - ERRATA AND CHANGES

DRAFT ENVIRONMENTAL DOCUMENT

1. Table 3-3 follows page 3-17

Line 9, Column 2, 230kV lines
Change to read: 0.11 gauss

2. Table 3-9 follows page 3-33

Page 5 of 5, Connector L, Ecological Resources
Change to read: Crosses 0.3 mile of raptor habitat.

Connector N, Agency/Public Comments
Delete: (La Mesa)

3. Page 5-9

Following discussion of Connector K
Insert: Connector L - Potential significant (moderate) residual impacts would occur along Connector L for 2.3 miles. Connector L would cross raptor habitat and moderate-quality riparian vegetation.

4. Page 5-14

Paragraph 1, Line 3
Change: Set VI to Set V

5. Page 5-36

Paragraph 6, Line 5
Change: desired to designed

6. Page 5-37

Paragraph 1, Line 2
Delete: (CPUC G.O. 95)

Paragraph 5, Line 2
Delete: and G.O. 95

7. Appendix D - Agricultural Study

Appendix A, Table XVI (continued), Line 4
Column 5

Change: 5.5 to 19.6

8. Page E-5

Appendix E, Paragraph 8, Line 3

Change: Figure 2.3.2C to Figure 2.3.3C

9. Page E-11

Appendix E, Paragraph 6, Line 8

Change: 0.039 mA/(kV/m) to 0.39 mA/(kV/m)

SUPPLEMENT TO THE DRAFT ENVIRONMENTAL DOCUMENT

1. Page 3-15s

Paragraph 5

The California Legislature established as a goal that ten percent of the state's electricity be obtained from wind by the year 2000 (AB 2976). The CEC goal prior to BR III was 500 MW by 1987. The CEC BR III goals for 1985 and 1992 were incorrectly cited in the SDES as 100 MW and 2500 MW, respectively. The correct state-wide goals are 259 MW by 1985 and 1489 MW by 1992 (Electricity Tomorrow, p. 363).

2. Page 3-20s

Paragraph 1, Line 4

Change to read: The longest known underground EHV transmission line is 1.3 miles long.

3. Table 3-3(R) (page 2 of 2) follows page 3-22s

Circuit configuration, Column 2 (230kV line)

Change to read: Two circuits per structure, two conductors per phase, vertical configuration.

4. Figure 3-2(R) follows page 3-22s

Upper left figure

Change caption to read: Typical Single-Circuit 500kV Tangent Tower

5. Figure 3-3 follows page 3-22s

Change title to read: Typical 500kV Transposition and Dead-End Tower Types

Upper right figure

Change caption to read: Typical Dead-End Tower

6. Figure 3-5 follows page 3-24s

Personnel Required for Footing Installation

Change to read: 35

7. Figure 3-6 follows page 3-24s

Personnel Required for Footing Installation

Change to read: 35

8. Page 3-34s

Last paragraph, Line 2

Delete: committed

9. Table 3-9(R) follows page 3-34s

Page 2 of 13

Set XIV - Route 1, 500kV, Social and Economic Land Uses

Add: Highly impacts 1 single-family dwelling

Estimated Costs

Change to read: 14,474,000

10. Table 3-9(R) follows page 3-34s

Page 4 of 13

Set XIV - Route 3, 500kV, Social and Economic Land Uses

Change: 15 single-family dwellings to 22 single-family dwellings.

11. Table 3-9(R) follows page 3-34s

Page 5 of 13

Set XIV - Route 4, 500kV, Estimated Costs

Change to read: 15,415,000

12. Table 3-9(R) follows page 3-34s

Page 6 of 13

Set XIV - Route 5, 500kV, Estimated Costs

Change to read: 11,863,000

13. Table 3-9(R) follows page 3-34s

Page 7 of 13

Set XIV - Route 6, 500kV, Estimated Costs

Change to read: 12,648,000

14. Table 3-9(R) follows page 3-34s

Page 10 of 13

Set IX(R) - Route 1, 500kV, Social and Economic Land Uses

Change to read: Highly impacts 1 single-family dwelling.

Set IX(R) - Route 1, 161kV, Ecological Resources

Add: ; crosses 0.3 mile of flat-tailed horned lizard habitat.

15. Table 3-9(R) follows page 3-34s

Page 11 of 13

Set IX(R) - Route 2, Route Description - 161kV

Line 3 - change: west to east

Set IX(R) - Route 2, 500kV, Native American Cultural Resources

Delete: Crosses multiple resource area

Change to: Visible from 3 sites

Set IX(R) - Route 2, 161kV, Ecological Resources

Add: Crosses 3.0 miles of flat-tailed horned lizard habitat

Set IX(R) - Route 2, 161kV, Park, Preservation and Recreation Land Uses

Change to read: Crosses 0.3 mile of restricted ORV area.

16. Table 3-9(R) follows page 3-34s

Page 12 of 13

Set IX(R) - Route 3, 500kV, Ecological Resources

Delete: Significant waterfowl collision hazard south of Salton Sea.

Set IX(R) - Route 3, 500kV, Native American Cultural Resources

Change to read: Visible from sacred hills and mountain, burial site and 3 other sites.

Set IX(R) - Route 3, Substation E, Social and Economic Land Uses

Delete: Restricted ORV area.

Set IX(R) - Route 3, Substation E, Parks, Preservation and Recreation Land Uses

Add: Restricted ORV area.

17. Table 3-9(R) follows page 3-34s

Page 13 of 13

Set XI(R) - Routes 2, 3, 4 and 5, Route Description

Change: Link 145 to Link 147

Set XI(R) - Routes 1-5, Parks, Preservation and Recreation Land Uses

Change: proposed National Natural Landmark to Otay Mountain National Natural Landmark.

Set XI(R) - Route 1, Social and Economic Land Uses

Change to read: (50 dwellings within 1/4 mile of ROW.)

Set XI(R) - Route 2, Ecological Resources

Change to read: Crosses 9.0 miles of special-status plant habitat; crosses 14.8 miles of raptor habitat.

Set XI(R) - Route 3, Social and Economic Land uses

Change to read: (11 dwellings within 1/4 mile of ROW.)

Set XI(R) - Route 3, Archaeological Resources

Add: Previously recorded sites; crosses area with a high probability of sites.

Set XI(R) - Route 3, Estimated Costs

Change to read: 4,740,000

Set XI(R) - Route 4, Ecological Resources

Change: 12.0 miles to 12.4 miles

Set XI(R) - Route 4, Social and Economic Land Uses
Change to read: (11 dwellings within 1/4 mile of ROW.)

Set XI(R) - Route 4, Estimated Costs
Change to read: 4,750,000

Set XI(R) - Route 5, Ecological Resources
Change: 11.8 miles to 11.3 miles

Set XI(R) - Route 5, Social and Economic Land Uses
Change to read: (30 dwellings within 1/4 mile of ROW.)

Set XI(R) - Route 5, Estimated Costs
Change to read: 4,871,000

18. Chapter IV - Tables

Table 4-8(A)

Delete: Table 4-8(A)

Substitute the following table.

TABLE 4-8(A)
PROJECTED TOTAL COST, ASSESSED VALUE AND TAX REVENUES
ROUTES AND ASSOCIATED SCHOOL DISTRICTS
(1979 TAX SCHEDULES)
BY ROUTE
(1979 DOLLARS)

Route	Primary Tax-Rate Area	County	Total Cost (\$000)	Assessed Value (\$000)
Set IX(R)	Imperial Valley			
Route 1	68, 57, 66, 74, 69	Imperial	13,231	2,646
Route 2	68, 69, 56	Imperial	18,986	3,797
Route 3	68, 69, 56, 90	Imperial	24,961	4,993
Set XI(R)	Tecate Peak			
Route 1	91000 79000	San Diego	4,253	851
Route 2	91000 79000	San Diego	5,380	1,076
Route 3	91000 79000	San Diego	4,740	948
Route 4	91000 79000	San Diego	4,750	950
Route 5	91000 79000	San Diego	4,871	974
Set XIII	Muggins Mountains			
Route 1	01, 24	Yuma	4,258	1,341
Route 2	01, 24	Yuma	4,949	1,559

TABLE 4-8(A) (continued)
Projected Total Cost, Assessed Value and Tax Revenues

Route	Primary Tax-Rate Area	County	Total Cost (\$000)	Assessed Value (\$000)
Set XIV	Yuma			
Route 1	01, 94000	Yuma, Imperial	14,474	3,676
Route 2	01, 13, 11 94000	Yuma, Imperial	13,491	3,898
Route 3	01, 13, 11 94000	Yuma, Imperial	13,491	3,898
Route 4	01, 13, 94000	Yuma, Imperial	15,415	2,996
Route 5	01, 94000	Yuma, Imperial	11,863	2,242
Route 6	01, 94000	Yuma, Imperial	12,648	3,100
Set XV	Sand Hills			
Route 1	94000	Imperial	2,622	524
Route 2	94000	Imperial	1,903	308
Connector 1(R)				
	94000 57000 68000	Imperial	6,610	1,322

Source: Wirth Associates, Inc. 1981 (Derived from information provided by Mountain West Research, Inc.)

19. Page 5-10s

Paragraph 2, Line 3

Change to read: crosses 5.8 miles of high probability in which major drainages are located and previously recorded archaeological sites are present.

20. Page 5-11s

Paragraph 2, Line 3

Delete: Set XV

Following Paragraph 3

Add: Set XV - Sand Hills - Potential significant (moderate) residual impacts would occur along both routes due to crossing the Plank Road ACEC.

21. Chapter V - Tables

Table 5-6(A)

Delete: Table 5-6(A)

Substitute the following table.

TABLE 5-6(A)*
PROJECTED TOTAL TAX REVENUES
(1979 Tax Schedules)
BY ROUTE
(1979 Dollars)

<u>Route</u>	<u>Amount of Tax</u> <u>(For one year)</u>
Set IX(R) - Route 1	\$ 118,833
Set IX(R) - Route 2	161,275
Set IX(R) - Route 3	215,222
Set XI(R) - Route 1	39,579
Set XI(R) - Route 2	49,623
Set XI(R) - Route 3	44,269
Set XI(R) - Route 4	44,327
Set XI(R) - Route 5	45,366
Set XIII - Route 1	184,084
Set XIII - Route 2	213,775
Set XIV - Route 1	318,832
Set XIV - Route 2	407,707
Set XIV - Route 3	407,707
Set XIV - Route 4	193,214
Set XIV - Route 5	155,525
Set XIV - Route 6	252,967
Set XV - Route 1	25,305
Set XV - Route 2	18,425
Connector I(R)	64,799

*Refer to Table 4-8(A) for Tax-Rate Area and Counties.

Source: Wirth Associates, Inc., 1981. (Derived from information provided by Mountain West Research, Inc.)

CHANGES

SDG&E Power Purchases

The SDES reported that SDG&E "has contracts for firm power and associated energy from New Mexico and Arizona utilities, deliverable at PVNGS through 1988." (SDES, Chapter 1, p. 1-4s and Figure 1-2(R).) Since publication of the SDES in April 1981, SDG&E has undertaken negotiations to extend its power-purchase contract with Tucson Electric Power (TEP) from December 1988 to May 31, 1994. Purchases would be in varying amounts, deliverable at PVNGS Switchyard, from Springerville Units No. 1 and 2 through May 31, 1993 with additional purchases available from Springerville Units No. 1, 2 and 3 from July 1, 1991, through May 31, 1994 if Unit No. 3 is constructed and is commercial by June 1, 1991.

It should be emphasized that construction of Springerville is not dependent on purchase contracts with SDG&E. Tucson Electric Power received approval for Springerville Generating Station from the Arizona Power Plant and Transmission Line Siting Committee in July 1977, and permits from EPA for Units No. 1 and 2, and conditionally for No. 3, in December 1977.

Integration of SDG&E and TEP Systems

San Diego Gas & Electric and TEP are presently studying the possibility of integrating their electric systems for joint operation by 1986. Construction of the proposed 500kV transmission line might make possible joint dispatching for the two systems, although improvements and additions to related facilities (in compliance with CEQA and NEPA) may also be necessary.

Preliminary studies of an integrated operation indicate that 16 million barrels of oil could be displaced with coal-fired power between 1986 and 1995 at a savings of \$2 billion (to be shared equally by the two utilities) in addition to savings that will be realized under SDG&E's existing purchase contracts with TEP. Integration of the SDG&E and TEP systems would improve SDG&E's access to economy energy from the TEP system by giving SDG&E first call on excess energy.

Proposed IID Ownership Interest in APS/SDG&E Interconnection Project

San Diego Gas & Electric has offered Imperial Irrigation District (IID) ownership interest not to exceed 200 MW, transmission service not to exceed 100 MW, or a combination of ownership/service not to exceed 200 MW of SDG&E's share of the proposed 500kV transmission line and substations from PVNGS Switchyard to Imperial Valley Substation. The IID is expected to respond to SDG&E's offer within the next few months.

CONTRIBUTOR FOR UNDERGROUND TRANSMISSION STUDY

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Association: High Voltage Cable Systems

EIS Assignment: 500kV and 230kV Underground Transmission Studies

Education: B.A.Sc. in Electrical Engineering, Faculty of Applied Science and Engineering, University of Toronto, Toronto, Ontario, Canada

Postgraduate Studies and Member of Faculty Staff, Electrical Engineering Department, Faculty of Applied Science and Engineering, University of Toronto

Extensive experience since 1948 as an electrical design engineer specializing in underground transmission systems. Presently independent consultant and project manager for Underground Transmission Program, Electrical Systems Division, Electric Power Research Institute. Prior experience includes project management of design, manufacture and installation of underground HV transmission systems, including ancillary equipment, in the United States, Canada and Venezuela, and the design and manufacture of HV underground cable systems and power cables for nuclear plants.

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- Complex Short Distance Problems. A.F. Carry, W.J. Ryan, Boston Edison.
- High Power Transmission Cables: Taped Cables. E.D. Eich.
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- i) "The Long Island Sound Submarine Cable Interconnection Operating Experience." Chamberlin and Margolin, pp. 290-298.
- ii) "230kV Cable Crossing of Baltimore Harbor," Rueckert and Bien, pp. 347-353.
- iii) "400kV Self-Contained Oil-Filled Cable Installations in South London, U.K. Arkell, Daughy & Skipper, pp. 254-263.

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